YOJANA

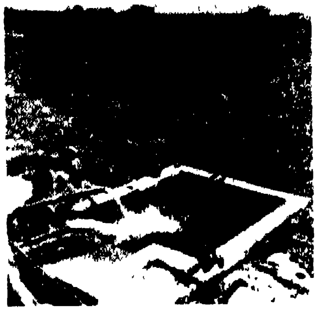
26
VOLUME
22
NUMBER
RUPEE ONE
DECEMBER 1-15, 1982

NABARD will help implement 20-Point programme

also

Project management in power sector
Women can help check population
Bharati—the poet-patriot

As we go ahead with 20-point programme



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Energising pumpsets

IN the New Economic Programme, increasing irrigation potential developing and disseminating technologies and inputs for dryland agriculture have been accorded the first priorty.

Three million hectares of additional land will get water in each of the three remaining years of the Sixth Plan.

According to the Sixth Plan document, "this will be the biggest effort in human history in bringing additional land under irrigation each year".

Thanks to the rural electrification scheme, lakhs of pump sets have been energised and million of hectares of land has been brought under irrigation. According to the latest quarterly report, the progress achieved so far is as follows :

Number of pumpsets to be energised during 1982-83	3,78,055
Achievement till the end of September 1982	1,16,492

Rural electrification

WITH a view to raise the standard of living in the rural areas, the Rural Electrification Corporation was set up in the Fourth Plan period. Provision was made for electrification of backward and tribal areas.

In the Sixth Plan an outlay of Rs 1173 crores has been set apart for rural electrification schemes, already sanctioned or to be sanctioned. It envisages electrification of 98,000 villages. It is expected that by the end of the Sixth Plan, 35 lakh villages will be electrified in the country as against 5.76 lakh villages. Progress recorded in the implementation of the programme upto the end of September 1982 is as follows :

Number of villages targetted for electrification	26,254
Achievement till the end of September 1982	6,936

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NABARD : Institution building in rural credit

—SMT. INDIRA GANDHI

The National Bank for Agriculture and Rural Development (NABARD) which came into existence on July 12, 1982 under an Act of Parliament is the apex organisation in respect of all matters relating to policy, planning and operational aspects concerning flow of credit for promotion of agriculture, small scale industries, cottage and village industries, handicrafts and other allied economic activities in rural areas. Inaugurating NABARD on November 5, 1982 in New Delhi, Prime Minister Shrimati Indira Gandhi said that while attention was being paid to irrigated lands to raise agricultural production, it was more important that the small farmers with very small holding were helped to raise their productivity. She added, "that is the base of our economy and that is the base of our society". Reproduced here is the text of her speech.

"OUR STRESS FROM THE BEGINNING of the struggle for freedom and afterwards has been how to strengthen our economy and how to raise the standard of living of the poorest and the weakest. We have, through the various measures, through the great enthusiasm for and commitment of Jawaharlal Nehru, taken science to agriculture and persuaded our farmers to adopt more modern methods. But we have done this initially without taking into consideration local prejudices, local traditions and local conditions. This is why our work has not been as effective as it should have been in these years. Today it is obvious that whether in banking or anything else, we have to have certain rules, but the person who deals with a particular community must be conversant with the language that is spoken there, the customs of the area and the ideas and methods which appeal to the peasants of that area most, so that the message can really get through to them and is not something which goes over their heads.

In the first 47 years of this century our growth rate was negligible, especially in the rural areas. Now even our worst critics concede that the 'tortoise' has covered quite a long distance.

It is just as important that we are polite and that we do not regard any human being as being inferior to us merely because he does not know the English language or does not have the sort of manners which we think he should have. We are fortunate that the Indian people have a very rich cultural heritage and a very sound commonsense. It is because the farmers themselves were willing to adopt and adapt modern methods that we have been able to make such a spectacular progress in agricultural production. It is not enough for those with irrigated lands or those whose lands can be irrigated to increase their production—that is necessary and is being done—but what is even more important is that the small farmer's, the one who has very small holding, productivity must be helped to increase. That is the base of our economy, that is the base of our society, and if that is not strengthened, just strengthening the higher levels is not going to help us to go ahead at the speed at which we all want to do.

THE NATIONALIZATION OF BANKS has vastly enlarged the credit facilities available to farmers, and rural electrification has given strong support to agriculture and within a generation. Indian farmers have disapproved the charge so often made by our own people that they are tradition-bound or not willing to work. In the first 47 years of this century our growth-rate was negligible, especially in the rural areas. Now even our erstwhile critics concede that the 'tortoise' has covered quite a long distance.

We cannot afford any type of complacency nor is there much room for self-congratulation. Agricultural production still needs a great thrust. Grain output must grow at a faster rate, so must the production of pulses, oilseeds and commercial crops as a whole. That is the only way to strengthen our rural economy and our stability. As the people get greater purchasing power, their demands will grow and we have to forecast what the demands will be and be able to meet them. Obviously credit has a major contribution to make towards this effort.

Some years ago we took some measures to free our villagers and tribals from the moneylender. But in doing so we left him high and dry at times of great difficulty, whether natural calamity, domestic needs or otherwise, because he was left without any help—although at that time we had said they would be helped by the banks. Our banking institutions must keep this in mind and go to their aid. In 1961 when the All India Debt and Rural Investment Survey was conducted, institutional credit formed only 18.4 per cent of the total rural indebtedness. This increased to 31.7 per cent in 1971 largely due to the commendable work of cooperatives in the 1960s and of nationalised banks in 1969. Commercial bank

NABARD has a special responsibility for institution-building in rural credit and must follow a balanced branch licensing policy which will ensure coordination between the various institutions involved.

finance to agriculture has increased from Rs. 44 crores in 1968 to Rs. 2911 crores in 1980. I hope that the report of the next Debt and Rural Investment Survey, which should be available to us next year, will depict a more favourable picture.

MUCH IS STILL NEEDED IN THE expansion of branches in rural areas. We must specially aim at greater access of the common people to banks. The Reserve Bank has advised all banks to work to minimise regional disparities. Preference must be given to the expansion of branches in un-banked and under-banked areas. There is also a feeling that local deposits are not being distributed adequately or fairly within even a particular region.

Too many rural programmes have become self-defeating because of the habit of treating every payment as give-away. Existing procedures are very cumbersome and must be simplified to cover small and marginal farmers specially in the priority sectors.

This bank, NABARD, is being established to integrate the total structure of finance for agriculture and rural development. We had accepted the National Commission of Agriculture's recommendations as far back as 1976 for such an apex organisation. Because of events beyond our control this has had to be postponed for five whole years as were many other programmes of development because at that time the two Governments which followed our's did not, even in principle, accept the need for such a bank. Now we have revived it and we are giving a concrete shape to our commitment.

The Bank has taken over the responsibilities of the Agriculture Refinance and Development Corporation as well as the refinancing functions of the Reserve Bank as regards State Cooperative Banks and Regional Rural Banks. It must cover all schemes related to rural development and should also support rural and cottage industries and ancillary occupations.

WE HAVE A MULTI-AGENCY APPROACH to rural credit. The efforts of cooperatives and commercial banks should be complementary NABARD has a special responsibility for institution-building in rural credit and must follow a balanced branch licensing policy which will ensure coordination between the various institutions involved.

The establishment of NABARD need not and should not lead to the neglect of the cooperative movement or a reduction of its role in rural development. I hope NABARD will function through State Cooperative Banks, the State Land Development banks and other commercial banks. It is good that the NABARD Board will have two representatives of cooperatives, which will also be represented on their advisory committees when they are formed.

The expansion of rural credit necessarily implies the need for the recycling of funds. The recovery performance of bank loans to agriculture has not shown any perceptible change over the past few years, remaining around 50 per cent. Such continued overdues have inhibited the ability of banks to expand activities and bankers should cooperate in creating a more congenial climate for recovery. Obviously we must give special consideration at times of natural calamity. At the same time a blanket write-off loans will vitiate the climate of recovery. The extraordinary should not be allowed to become the rule. Too many rural programmes have become self-defeating because of the habit of treating every payment as give-away In cooperation with State Governments, NABARD should ensure more vigilant monitoring. At the same time NABARD should examine measures to provide refinance for small and marginal farmers which so far as possible must be linked to the progress in recoveries. Existing procedure are very cumbersome and must be simplified to cover small and marginal farmers specially in the priority sectors.

I hope NABARD will develop into a dynamic service institution and provide leadership for banks and cooperatives in rural development. Its cadre must be experienced in different disciplines and also be imbued with a spirit of development and service. The Revised 20-Point Programme and our anti-poverty and rural development programmes have high expectations of NABARD. It goes without saying that it should so develop that the people regard it as a friend and a guide rather than a rigid institution. I am sure that if this spirit of cooperation can be generated, this scheme will succeed in helping our farmers and in helping towards a general development of our economy.

Vikas Volunteer Vahini

A new corps of volunteers called "Vikas Volunteer Vahini" has been raised to spread the message of development through institutional credit. The Vahini, formed under the aegis of the National Bank for Agriculture and Rural Development (NABARD) will have as volunteers farmers with no political affiliation and who have been beneficiaries of credit.

Farmers given saplings

FARMERS ARE BEING encouraged to grow fruits in Durg district of M. P. For this purpose, ten saplings per head are being given free of cost to those farmers who have their own irrigation wells and five saplings to those who have 'anganwaris'. This scheme is being implemented in 40 villages of the district during the current year.

NABARD : in service of the nation

The NABARD takes care of the financial needs of our rural sector. Its functions embrace those of the Agricultural Refinance and Development Corporation and the refinancing functions of the Reserve Bank of India. The article deals with various activities of the NABARD.

THE NATIONAL BANK FOR AGRICULTURE and Rural Development (NABARD) came into existence on July 12, 1982 under an Act of Parliament. NABARD is the apex organisation in respect of all matters relating to policy, planning and operational aspects concerning flow of credit for promotion of agriculture, small scale industries, cottage and village industries, handicrafts and other allied economic activities in rural areas. It is a single integrated agency for meeting the credit needs of all types for agricultural and rural development and helps in the implementations of policies and programmes included in the Sixth Plan.

NABARD provides short and long term credit to other financial agencies so that the latter would extend loans to the farmers as per their needs.

In nut-shell, it has taken over the entire undertaking of the former Agricultural Refinance and Development Corporation (ARDC), as well as the refinancing functions from the Reserve Bank of India in relation to state cooperative banks (SCBs) and regional rural banks (RRBs).

THE FUNCTIONS ASSIGNED TO the NABARD are as under :—

(i) Development policy, planning and operational matters relating to credit for agriculture, allied activities, rural artisans and industries and other rural development activities.

(ii) Training, research and consultancy relating to credit for agriculture and rural development.

(iii) Refinance (Short Term. Medium Term and Long Term) to the Cooperative and Regional Rural Banks including cooperative marketing and distribution.

(iv) Refinance to commercial banks against term lending, short term accommodation for special purpose.

(v) Direct lending through consortium arrangements in special cases.

(vi) Coordination and monitoring of all agricultural and rural lending activities with a view to tying them up with extension and planned development activities in the rural sector.

(vii) Inspection of cooperative banks and Regional Rural Banks.

THE TYPES OF CREDIT PROVIDED by NABARD to the different financing banks are given below :

COMMERCIAL BANKS : Refinance is provided in respect of long-term loans given by commercial banks to agriculture and allied activities. The interest on refinance of agricultural loans is 6.5 per cent for minor irrigation and land development and 7.5 per cent for other agricultural development purposes (6.5 per cent for small farmers).

REGIONAL RURAL BANKS : Long-term refinance is provided to RRBs on terms and conditions similar to those applicable to commercial banks, as well as refinance for medium-term loans given for agricultural and rural development. Short-term refinance is also provided at three per cent below Bank Rate. In the current year (July 1982-June 1983), the RRBs having loan business of Rs. 8 crores and above as on March 31, 1982 can get refinance upto 40 per cent of their outstanding eligible loans. Their own involvement in the outstanding loans should, however, be not less than 30 per cent, while borrowings from sponsor banks may be upto 30 per cent. Banks having loan business of less than Rs. 8 crores will get refinance upto 50 per cent and their own involvenment should not be less than 20 per cent in the case of banks in existence for five years and above and not less than 15 per cent in the case of banks in existence for less than five years. The minimum involvement of a Regional Rural Bank and the refinance limit for it is determined by NABARD with reference to its deposit resources, the balance kept with sponsor bank and the realistic lending programme. Advances against gold ornaments and jewellery should not exceed 40 per cent of total outstanding loans; advances in excess of this level are not eligible for refinance. Short-term loans granted to RRBs can be converted into medium-term loans for periods not exceeding seven years under conditions of drought, famine, other natural calamities, military operations and enemy action.

NABARD cadre must be experienced in different disciplines and also be with a spirit of development and service. The revised 20-point programme and our anti-poverty and rural development programmes have high expectations of NABARD. It shiuld so develop that the people regard it as a friend and a guide rather than a rigid institution.

LAND DEVELOPMENT BANKS : Refinance is provided in respect of long-term loans given by land development banks for agriculture and allied activities such as minor irrigation, land development, farm merchanisation, plantation, horticulture, poultry farming, sheep breeding, piggery, fisheries, dairy development, storage and market yards, gobar gas plants, etc. The interest charged is 6.5 per cent for minor irrigation and land development and 7.5 per cent for other agricultural development purposes (6.5 per cent for small farmers).

CO-OPERATIVE BANKS : Refinance repayable within 18 months is provided to state co-operative banks in respect of short-term finance given for agricultural operations or marketing of crops and for various other activities for promotion of or in the field of agriculture and rural development including production or marketing activities of artisans, small-scale industries, industries in the tiny and decentralised sectors, village|cottage industries or persons engaged in handicrafts and other rural crafts. The interest charged on refinance is three per cent below Bank Rate for agricultural operations and at Bank Rate for marketing of crops. Refinance limits are fixed. Short-term loans are converted into medium-term loans for periods not exceeding seven years under conditions of drought, famine,.other natural calamities, military operations and enemy action. Medium-term refinance for periods not less than 18 months and not exceeding seven years can be had for financing approved agricultural purposes such as digging of wells and purchase of pumpsets, reclamation and levelling of land, preparation of land for plantation crops and orchards, purchase of transport equipment, purchase of milch cattle, bullocks|bullock carts, camels|camel carts, buffaloes|buffalo carts, poultry, piggery, sheep rearing, goat rearing, installation of gobar gas plants, pisciculture, etc.

STATE GOVERNMENTS : Loans repayable within 20 years are given to State Governments for subscribing directly or indirectly to the share capital of co-opedative credit societies.

THE SHARE CAPITAL OF NABARD worth Rs. 100 crores is held by the Reserve Bank and Government of India in equal proportions. For its loan operations, the NABARD can draw funds from the Government of India, the World Bank and other multilateral and bilateral agencies, the market and the National Rural Credit Long-term Operations and Stabilisation Funds. The Reserve Bank has also provided a line of credit for NABARD's short-term operations.

The NABARD also maintains a research and development fund which will be strengthened through contributions from its profits every year. This will help promote research in agriculture and rural development and facilitate NABARD in formulating and designing projects|programmes to suit the requirements of different areas and to cover activities requiring special attention for various reasons.

Employment in Rural Areas

UNDER NATIONAL RURAL EMPLOYMENT PROGRAMME 421 million mandays in 1980-81 and 359 million mandays of employment in 1981-82 respectively were generated. Under the Integrated Rural Development Programme 2.78 million and 8.82 million families were assisted in 1980-81 and 1981-82 respectively.

The Ministry of Rural Development was implementing the programme of : (i) Integrated Rural Development Programme (IRDP); (ii) Training of Rural Youth for Self-Employment (TRYSEM); (iii) National Rural Employment Programme (NREP) for maximising the employment opportunities in the rural areas. The outlay for the Sixth Five Year Plan including States share for IRDP, TRYSEM and NREP were Rs. 1500 crores, Rs. 10 crores and Rs. 1620 crores respectively.

Under the National Scheme of Training of Rural Youth for Self-Employment (TRYSEM) 1,79,000 youths were trained and 83,000 youths were provided self-employment during the year 1981-82. For 1980-81 the figures were 1,23,000 and 45,000 respectively.

The number of unemployed persons in rural areas on the basis of the rates of unemployment observed in National Sample Survey 32nd Round (1977-78) was estimated at 15.36 million in March 1980.

Narmada development a national task

S. B. Chavan

The Narmada river occupies an important place not only in Madhya Pradesh but also for the country as a whole. The Narmada presents a unique opportunity for the planners for developing its water resources in a systematic, scientific and integrated manner as the river is almost virgin in its development and the entire planning construction, and development can be planned in a scientific manner. In a speech made at a Seminar on the Narmada Valley organised by the Madhya Pradesh Government in New Delhi recently, Deputy Chairman, Planning Commission and Union Minister for Planning, Shri S. B. Chavan said that the planners have to keep in view the importance of drainage in the area provided with irrigation facilities.

NEXT TO THE AIR WE BREATHE, water is the most precious thing for mankind. The development of water resources has been engaging the attention of man from times immemorial. However, the integrated approach of harnessing the water resources, for development of irrigation, power, flood control and other uses is of recent origin. It is in that context that the approach of the organisers of this seminar to consider the integrated development of the Narmada Valley is timely and significant.

I need hardly say how important it is for all of us and for the country that the water resources of our river systems and the ground waters should be developed as fast as possible. The rapid growth of population and the need for increased food and fibre, highlights the need for urgently increasing our agricultural production. The growth of population in itself has limited the land available for agriculture because of the need of more land for domestic, industrial, communication and other purposes. Increase in production, has, therefore, to come largely from high intensity cropping and this will be possible only when irrigation is introduced.

The introduction of irrigation will enable us to introduce other components of modern agriculture such as high yielding varieties, improved soil health-care and better crop harvesting technology. The introduction of high yielding varieties becomes possible only if there is assured irrigation. This is evident from the results achieved in Punjab and Haryana. Madhya Pradesh has very much lagged behind in development of irrigation due to various reasons, historical and otherwise and irrigated area is only about 13 per cent of the gross cropped area against a national average of 32 per cent. However, since the last few years and particularly during the Sixth Plan, an energetic attempt is being made to increase the irrigation potential through various steps. One of the important components of this programme is the development of the Narmada Valley.

The Narmada river occupies an important place not only in Madhya Pradesh but also for the country as a whole. The Narmada carries a flow greater than that of Ravi, Beas and Satluj put together and twice that of the Cauvery river. This is the biggest west flowing river of India.

Besides developing the water resources for irrigation and power, Madhya Pradesh is also giving attention to the ecology and the environmental preservation of the valley and the people inhabiting Narmada basin. Steps are also being taken to preserve the cultural heritage of these people particularly the tribal folk who constitute nearly one-third of the population of the Basin.

MADHYA PRADESH IS THE LARGEST STATE in India. It occupies a pivotal place in the development of irrigation systems not only in M. P. but all its neighbours. The State possess an ultimate irrigation potential of more than 10 M. Ha of which only about 3 M. Ha has been developed so far. There is a long way to go in developing the balance potential and the State has recently undertaken a number of measures for increasing its activity in this field. M. P. has also a heritage and background in the development of irrigation particularly in the Chattisgarh region. The old Tandula and Mahanadi Canals are functioning for quite a few decades. Recently, a number of new projects have also been taken up and some of them have started giving benefits. Command Area Development authorities have been set up in a number of projects and the State

Government is taking steps for expediting the use of irrigation potential created under these projects.

The Narmada River occupies an important place not only in Madhya Pradesh but also for the country as a whole. It finds a place in our sacred texts and is one of the rivers mentioned by name in our morning prayers. The Narmada carries a flow greater than that of Ravi, Beas and Satluj put together and twice that of the Cauvery river. This is the biggest west-flowing river of our country.

The Narmada basin extends over an area of nearly 100,000 km. and occupies about 20 per cent of Madhya Pradesh State's area. Investigations for the development of the Narmada Waters have been carried out since independence. Because of certain inter-State problems, the development so far has been slow and almost insignificant except for the Tawa Project and even this project has taken more than two decades as it was beset with numerous technical and other problems. Now that the Narmada water dispute has been settled in 1979, the State of Madhya Pradesh, Gujarat, Maharashtra and Rajasthan are making earnest efforts for development of the Narmada. Madhya Pradesh has the biggest stake in its development and therefore, has to make a much larger effort than the other States.

AMONG THE RIVER SYSTEMS IN INDIA, Narmada perhaps, presents a unique opportunity for the planners for developing its water resources in a systematic, scientific and integrated manner because the river is almost virgin in its development and the entire planning, construction, and development can be planned in a scientific manner. Madhya Pradesh has carried out detailed investigations and has prepared plans for developing her share of the Narmada waters. I am glad to note that besides developing the water resources for irrigation and power, the State is also giving attention to the ecology and the environmental preservation of the valley and the people inhabiting this basin. I am glad to learn the steps are being taken to preserve the cultural heritage of these people particularly the tribal folk who constitute nearly one-third of the population of the Narmada Basin.

Amongst the important projects to be developed in the Narmada Valley in Madhya Pradesh, mention may be made of the Narmada Sagar Project and Bargi Project, Madhya Pradesh also has an important share in Sardar Sarovar Project. In addition, numerous projects, big and small, are contemplated on the tributaries of the Narmada. On the main stem of the river Narmada, projects are also contemplated at Onkareshwar and Maheshwar for development of hydro-power. The irrigation and power benefit that flow from these projects is sizeable. The value of this Hydro power situated centrally is invaluable. Particularly so on account of the numerous thermal stations around.

The cost of development of the Narmada Water resources in Madhya Pradesh has been estimated at over Rs. 3,000 crores. Every work should be planned in such a way that as and when each phase in a project gets completed, the State and the people realise some benefits immediately.

The cost of projects to be built hereafter will be high and we should, therefore, get the maximum return for the investment made. This would be possible only if our irrigation systems are built and operated in such a way that the best efficiency is achieved in the supply of water to the culivators and the crop output is maximum for the investment in land, water and other inputs. The project authorities should adopt an efficient system of water management. For this purpose, not only there should be technical perfection in the design and construction of the canal systems but also in the management of the canals so that water reaches every farmer at the required time and in required quantities. A cadre of engineers, agronomists and administrators should be trained in water management and placed in position as soon as a system comes into operation. The age old concept that if water is given to the farmers, every thing will be alright has to be replaced by the new concept in which there is close cooperation and understanding with the farmers and they are advised about the best crops that should be grown. It is only when a right choice is made of the crop for a given soil water climatic conditions that the maximum results could be achieved. There is, therefore, urgent need to introduce an efficient water management in all our irrigation systems and particularly for the new irrigation systems. I am sure, Madhya Pradesh Government are already aware of these problems and in the projects to be built in the Narmada Basin, they would take every step to see that the best use is made of the waters of the Narmada.

Madhya Pradesh has very much lagged behind in development of irrigation due to various reasons, historical and otherwise and irrigated area is only about 13 per cent of the gross cropped area against a national average of 32 per cent.

THE FARMERS HAVE TO BE INVOLVED right from the beginning in planning, implementing and evaluating the success of the canal systems. The best results from the canal systems can be achieved only with the involvement of the farmers in the management and operation of the canal systems.

I would like to mention another important thing which the planners have to keep in view and that is the importance of drainage in the area provided with irrigation facilities. Crops need water at regulated doses, at definite intervals. Inadequate water supply at certain critical stages in the growth of the plants may reduce yield considerably. On the other hand, excessive water can also cause great damage to crops. Drainage of superfluous water from irrigated land is, therefore, as necessary for the satisfactory growth of crops as the irrigation water itself.

The cost of development of the Narmada water resources in Madhya Pradesh has been estimated at over Rs. 3,000 crores. This is a large sum and an investment of this order to be fruitful must be planned carefully. I would, therefore, suggest to the State Government and all those concerned that every work in the Narmada Basin should be planned in such a way that as and when each phase in a project gets completed the State and the people realise some benefits immediately. The anxiety to complete projects should not cloud the planners from planning investment in the utilisation of benefits, namely irrigation and power. They should plan for the development of the land, use of water, and also use of power that will become available. It is only when the investment starts repaying that further investment will become possible particularly in a State like Madhya Pradesh which has large commitments not only in the Narmada basin but also in other river basins. Madhya Pradesh has commitments in respect of a number of inter-State projects and development of other river basin.

Another problem that would require attention is the rehabilitation and resettlement of the oustees from the reservoirs to be created on the Narmada and its tributaries. The very fact of building large storages brings in its wake numerous problems, the most difficult of which being the problem of the persons displaced from the reservoirs. The problem of resettlement is of utmost importance. The Narmada tribunal has given in its order certain directions in this regard but the important thing is to implement these directions in the spirit in which they have been made. After all when these people sacrifice their land on which they have been living for centuries, the cost of rehabilitating them should take note of this. Their cultural heritage and their way of life should be disturbed to the minimum. ☐

Growing Trees in Test Tubes

K.S. Jayaraman

INDIAN SCIENTISTS are creating gardens in test tubes using a technology that has great potential for raising the productivity of forest lands, plantation crops, fruit and vegetable plants.

In a huge area near Pune in Maharashtra, scientists of the National Chemical Laboratory are cultivating sugarcane, In an adjacent field they are growing cabbages.

THE UNIQUE FEATURE of the sugarcane and cabbage is that neither of them was grown in the conventional way be sowing seeds. They were carefully raised in the laboratory without using seeds, and then transplanted in the fields.

The amazing thing is that only a small tissue of a selected cabbage was used to create the thousands of identical cabbage which are growing in the fields. Similarly, the sugarcanes growing in about an hectare of land came from a small tissue of the plant which the scientists used as a starting culture.

THIS IS THE TECHNOLOGY of tissue culture for rapid propagation of plants. Besides allowing fast multiplication of desired species of plants, the technology is particularly useful in growing selected disease-free and high yielding plants in a short span of time.

At least five laboratories in the country are now using this technology in experiments to grow vegetable crops, horticultural plants like orchids, forest trees like teak, and plantation crops like tea and rubber.

The advantage of tissue culture technique is that thousands of plants of identical types can be obtained in the laboratory. It allows their rapid multiplication and millions of plants of desired characterstics that are disease-resistant, virus-free and of superior quality, can be grown in a short time.

Orchids growth from tissue culture method are being exported. At the National Botanical Research Institute in Lucknow, scientists are using this method for growing the rare dioscorer plant. This plant contains a chemical called desgenin which is the raw material for oral pills and steroids.

Tissue culture techinque also provides a way to harvest the medicineal compounds from plants without actually growing these plants in fields. At the Jaipur University, scientists are producing anti-biotics from plant tissue culture. Scientists at the National Drug Research Institute in Lucknow have produced a potential anti-viral agent from tissue culture.

THIS NOVEL TECHNIQUE is also applied to grow drought-resistant trees for the Rajasthan desert. Scientists of the National Chemical Laboratory are using this technique for rapid clonal multiplication of forest trees like eucalyptus, cose-weed and teak.

The plantlets of these trees grown in test tubes are now successfully growing in pot. They will be later transferred to fields.

Ultimately this techology would help in mass production of identical superior trees by the millions of re-forestation.

Scientists, however, say that cost of clonal multiplication of plants using tissue culture is presently too high for commercial applications. But if the current progress in this field is any indication, this technology is likely to become economically viable by the end of this decade.

(Courtesy : AIR Spotlight)

Improving management of power projects

Mohd. Fazal

Addressing the All India Seminar on project management in power sector in New Delhi on November 8, 1982, Shri Mohd. Fazal, Member, Planning Commission stressed the need for reduction of time and cost over-runs in power projects. Excerpts from his speech are reproduced here.

ONE OF THE MAJOR DEFICIENCIES in the planned development of the Indian economy would appear to be in the area of project management. It would, therefore, appear imperative that continuous efforts should be made to define and improve the project management in various sectors of the economy, including that in the power sector.

In the power sector when one takes account of the hydel and thermal power projects which are under implementation, there would appear to be cost over-runs in different projects, ranging from 80 to 600 per cent and time over-runs from 18 months to 96 months. The Seminar will be doing a great national task if it is able to discuss and pin-down precisely the reasons for such a situation which needs considerable allround improvement. I thought I should mention in my talk at this Seminar some of the salient points with regard to project management in the power sector which might be taken into account while detailed discussions are held by the large body of experts who are assembled here from various parts of the country.

While drawing up of hydel power project schemes, considerable investigation work of a competent nature should be undertaken, before the project is formulated, and unless these investigations have been very carefully undertaken, and every aspect studied adequately, no project should be undertaken under any circumstances. In quite a number of cases, it has been found that hydel power project have been undertaken on the basis of certain investigations, which later on, while funds and equipment have been committed to the project, a number of snags have been found from time to time during the implementation of the project, which could have been foreseen much earlier before the actual implementation of the project was taken in hand. Latest technology and equipment for tunnelling should be used to ensure fast drilling of tunnels.

In the power sector when one takes into account the hydel and thermal power projects which are under implementation, there would appear to be cost over-runs in different projects, ranging from 80 to 600 per cent and time over-runs from 18 months to 96 months.

IN THE CASE OF THERMAL POWER PLANTS, while equipment for the main power plants are generally ordered in time, equipment and connected works for ancillary plants, namely, coal handling plant, ash handling plant, water cooling system, chimneys, etc., are ordered after a considerable lapse of time. In fact in some cases, orders for these ancillary facilities were firmed up about the time when originally the total project was supposed to have been commissioned. What really happens is that while orders for the main plant for the thermal power station like boilers, generators, etc., have to be placed with the propriety manufacturers, which are only one or two in number, the tenders for other items are issued to a fairly large number of possible contractors; and very long chain of discussions, negotiations, etc., take place relating to each of these tenders before they are firmed up. It might be prudent to ask for these quotations from selected pre-qualified contractors, and after firmed up the technical parameters, the final price bid may be obtained to cover exactly the final technical parameters as firmed up with the contractors, and when the final price bid is opened, and if it is considered necessary, then the negotiations should be held with only the lowest bidder. In any case, contracts for these ancillary facilities should be so fixed that these facilities are, in fact, completed well in time. In addition to the facilities mentioned above, orders for all the instrumentations, air conditioning, etc., should also be placed about the same time so that when the main plant is ready, all the control systems are indeed in position, as also the air conditioning which may be required for the proper functioning of the control systems.

Latest technology and equipment for tunnelling should be used to ensure fast drilling of tunnels.

A stage has come to stop the malaise of long time and cost over-runs. It should be enforced strictly that no time over-runs of more than 10 per cent as against the original schedule will be allowed under any circumstances, and no cost over-runs which are more than the compounded rate of inflation during the period of installation of the project will be permitted. As a matter of fact, the Planning Commission now is taking such a line of approach with the Central Ministries and State Governments. All those persons who are found responsible for time and cost over-runs of more than absolute permissible limits mentioned above have to be seriously dealt with. The mental facility of living with abnormal cost and time over-runs has to give place to a sense of considerable urgency, and competence to realise the projects efficiently and properly.

WHEN POWER PROJECTS ARE TAKEN in hand, detailed PERT networks and other schedules are drawn up, but the experience has shown that these networks are possibly for the same of being in fashion. The purpose of having the PERT network is to determine the end time of the completion of the project, and to work backwards with regard to all the resources, time factors, etc. to ensure that the end of completion of the project is definitely achieved. Such an attitude will have to be nursed, developed and enforced.

There is a system of checking, counter-checking, and a number of other examinations of the working drawings by consultants, clients themselves, and some other agencies. All this seems to be time-consuming procedures which entail lot of delays in taking up the actual construction of various sections of the project in hand, as also large manpower employed by different agencies for these checks, counter-checks, etc., of the drawings. It would appear essential that the client has a very minimal of staff to have a look at a small sample of the drawings, but the main responsibility of the correctness of the drawings should vest with the consultants, and if the client wants some selected checks to be undertaken of the small samples of these drawings, then the client's personnel for check of these samples should sit in same rooms or halls as that of the consultants to avoid criss-cross reference and time consuming operations, before the drawing for civil construction, erection, fabrication etc., are released to the concerned contractors.

A stage has could to stop the malaise of long time and cost over-runs. The mental facility of living with abnormal cost and time over-runs has to give place to a sense of considerable urgency and competence to realise projects efficiently and properly.

IT DOES ALSO APPEAR ESSENTIAL to have a very close look at the civil construction machinery available for construction of large power projects, as also for erection of plant and machinery. One does get a picture that these machineries are inadequate in number in almost all the projects, and are also in many cases not of the right type so as to service the total quantum of the work required to be finalised within a proper span of time. It would, therefore, be important that project authorities do in fact check up the list of machineries available with the civil contractors and equipment erectors to ensure that these machinery, equipment, etc., would fulfil the total quantum of work to be done at the project within the time span allotted in the schedule.

If we have to cut the cost and time over-runs to ensure a timely completion of the power projects, a time has now come when the project authorities should consider very seriously of including in the contract conditions, clause of cancellation of contract within the early phase of a project where the land-marks of the contract, whether it be for equipment supply, civil works, or erection at a particular time, are not realised, and to fix alternative contractors who might have been the second or third of the tenderers who responded originally. Even in cases of monopoly supplies of plant and machinery for power projects, very strong discipline has to be enforced of fufilling the contractual obligations with regard to the supplies according to proper sequence, and supplies to conform strictly to the time schedule laid down in the contract document. If these schedules are not realised, or adhered to, penalties not only be levied, but also recovered with a proviso that the contract shall be cancelled for failure of fulfilment of contract obligations. It would be pointless to wait till about the end of the original schedule of completion of the total project, and then frittering about the inadequacies of contractors who supply equipment or are responsible for civil works, or erection with the result that the project authorities expose themselves to the blackmail of non-performance, and possibly in almost all cases the project authorities become a part and parcel of the manufacturers, contractors, etc., to connive with them to cover up time and cost over-runs. This could be a very unproductive situation. One does feel confident that given the opportunity of discussion at the national level, this Seminar will suggest very concrete measures which will ensure competent and timely completion of the power projects.

I am sure in my mind that considering the considerable technological and managerial competence developed in the country, taking into account also the natural resources with which India is endowed, the country has the making of a Great Society. In this task of national endeavour, experts in the power sector have in the past, and will also in the future, play a dominant and productive role. ☐

Power-line poles of laminated wood

POWER-LINE POLES of laminated wood which are claimed to be fully comparable to poles of natural wood or steel have been developed in Sweden. The 12-sided hollow poles will have a length up to 25 m, diameters between 350 and 1,100 mm, and be made of spruce or pine.

The surface treatment will be the same as for laminated wood and, if required, the poles can be impregnated with salt or creosote. In addition to power-line poles, they can be used for building and sign supports and boat and lamp masts, for example.

Power-line poles made from laminated wood can be tailor-made to customers' requirements as regards length, diameter, strength, etc. They are not affected by heat, cold, water or chemicals, and will last for 40-50 years with conventional impregnation.

(News Letter from Sweden.)

Problems before IRDP

Milan Sinha

Integrated Rural Development Programme aims at providing the services at the doorstep of the beneficiaries. Nearly one million scheduled caste and scheduled tribe families have benefited under the IRDP in 1981-82.

THE INTEGRATED RURAL DEVELOPMENT PROGRAMME (IRDP) was introduced for the first time in the country in 1978. Initially, it covered nearly 2300 development blocks out of over 5000. This Programme was subsequently, extended to the entire country with effect from October, 1980. The present situation is that IRDP forms a major component of the Prime Minister's new 20 Point Programme and has shown considerable improvement last year. During the year 1981-82, 2,83 million families were assisted under IRDP whereas in 1980-81, 2.79 million families were covered. Nearly one million Scheduled Caste and Schedule Tribes families have benefited under the IRDP in 1981-82. Out of the target of 600 families to be assisted under IRDP in each development block every year or 3000 families during the entire period of sixth five year plan, a minimum of 30 per cent of the families have to be from these (SC & ST) sections of the society.

Overdues of agricultural loans have been mounting steadily. Overdues amounting to less than Rs. 100 should be written off.

The main objectives of the IRDP are to identify the poorest of the poor families in the rural areas and help them to rise above the poverty line and also to enable them to acquire productive assets, technology, skill by providing them help through various Schemes started by central and state governments nationalised and cooperative banks, voluntary agencies. Besides, IRDP aims to bring about all round development of rural areas and to solve the problem of unemployment, mass poverty over a period of time rather just to augment production or include larger number of rural poor under the institutional credit fold or assist the poor by subsidies as is the common notion of the rural people. In fact, IRDP is a perfect programme and is of added significance in backward areas which are not endowed with natural resources and which are still quite untouched and unaware of the technological revolution.

Let us see, how this programme can be gainfully and more properly implemented to achieve its goal. Now first of all, we would see what are the major challenges which hinder the development efforts of State Governments and the nationalised banks, the two major instruments to administer and implement the programme.

Service at the Doorstep : The major characteristics of IRDP is that it aims at providing the services at the doorstep of the prospective beneficiaries. Under the present situation, the responsibility to implement the programme has been entrusted to the District Rural Development Agencies (DRDA) which will discharge it in close coordination with other Government Departments and the financial institution functioning in the respective areas. The lead banks have also been asked to give added importance in terms of allocations to this programme in the District Credit Plans and Annual Action Plans to be formulated by them for the overall, economic development of the district. But, majority of our villages are still not connected with even by non-metalled road with respective block Headquarters or nearby marketing centres. Some villages which are fortunately or unfortunately connected with road, metalled or non metalled, are cut off during the rainy season owing to overflowing 'nallas' and rivers and poor maintenance of roads. Post and telegraph facilities are not available in every nook and corner of the country. Availability of suitable premises to open a commercial bank branch is also a big problem that prevents commercial banks from extending their branch expansion programme to the interior and tribal areas. It is understood that several regional rural banks had to surrender licences for branch opening to the RBI as the centres were not accessible. For the same reason the commercial bank branches had to confine their operations to the roadside or approachable villages only. Assisting 600 families in every block involves, covering villages in remote areas, which is an almost impossible task in the present circumstances. From the point of view of beneficiaries, the presence of proper and suitable communication and transport are prerequisites for the progress. Lack of these facilities also prevents the block level staff and bank staff from providing continuous extension and services for production and marketing, exercising supervision over working of the units and the use of credit and recovery.

The main objectives of IRDP are to identify the poorest among the poor families in rural areas and to help them to rise over the poverty line.

THE RECOVERY IN agriculture and allied sectors is not at all sound and the agricultural overdues have been mounting over the years. To help keep overdues in check, the RBI has directed all the financial institutions, including commercial and cooperative banks that the defaulters should not be given credit anymore until and unless they repay their overdues.

This financial discipline imposed by RBI is no doubt, a prudent one, but under the Governments progressive socialistic policies and in a more or less changed situation, we should change our approach to the entire situation and should make a distinction between well-to-do and wilful defaulters and small and non-viable borrowers. In the latter case, it is found that most of them turned defaulters because of crop-failures, death of animals, lack of marketing facility, middleman hazard etc. Further, it is interesting to note that the amounts in default in a large number of cases among the latter category of borrowers are so small as Rs. 100 or less, so there does not seem any justification for penalising such defaulters so heavily. Further, if we do penalise them, the problem of finding potential beneficiaries under IRDP is bound to be very acute atleast in some districts. Directly, connected with this is the fact that until and unless these small borrowers are made eligible for fresh assistance, a large number of poor persons would not be benefiting from IRDP. So, in the present situation the wilful and well to do defaulters should be dealt an iron hand by introducing the system of summary recovery proceedings, if necessary, the small farmers and persons belonging to the SC, ST and backward classes must be provided relief. But the question is, how ?

WE KNOW THAT ALMOST ALL the state governments are spending crores of rupees on the welfare of the backward and down-trodden. Then why not a portion of such funds be diverted for writing off their dues so as to make them eligible for fresh loans to generate additional production and employment capacity. It is heartening to note that this is what was sought to be achieved by the Governments of Maharashtra and Tamil Nadu last year despite opposition from R.B.I. But it is interesting to recall here that the recovery discipline laid down by RBI was relaxed in 1973 in case of cooperative banks. At that time state governments contributed to cover a portion of the overdues to bring them again within the reach of different welfare schemes of the Government.

There is no denying the fact that a number of development blocks in our country are still inadequately banked and hence the area of operation of commercial banks' branches is quite large. Consequently many rural branches find it difficult to handle hundreds of proposals sponsored by D.R.D.A.'s under IRDP and that too, in most of the cases, towards the fag end of the financial year presumably to utilise the allocated share of subsidy. The situation can be made easy if the staff position in commercial bank branches especially rural branches is sound. But the fact is that the manpower position in rural branches continues to be tight. The unpreceded programme of branch expansion and the resultant large scale promotions have helped worsen the situation. We know that banking service recruitment boards are set up to recruit new staff in different nationalised banks but this being a long process much of the time is lost in replenishing the staff. In the absence of adequate staff, the Managers, who are mainly responsible for all that happens in the branches, would obviously take much more time in disposing of the applications received by them under IRD Programme. Further, in the prevailing situation it is not realistic to expect the managers to attend to the customers during the working hours and thereafter to mobilise deposits, make appraisal of applications, verify securities, recover banks dues, attend a number of meetings, send replies of inspection reports and submit unending claim of daily, weekly, monthly, half-yearly and yearly, quarterly returns and progress reports.

As we have already discussed the different kinds of challenges before IRDP including the RBI directive debarring the defaulters from enjoying fresh credit facility, this seems very difficult to achieve the target fixed under IRDP. But we also know, that this target is to be achieved at any cost. In these circumstances, politics plays a major role to help achieve the target. It is found that in many cases, loans are being disbursed on political consideration. Local leaders also fully encash the handicaps of the Block and Bank authorities regarding the identification of proper borrowers. Consequently the programme runs surprisingly smoothly on paper but the grim fact remains that poor and down trodden for whom this programme has been introduced remain out of the different welfare schemes of the Government, including IRDP thereby defeating the very objective of the programme. □

Government keeping continuous watch on prices

The Government was keeping a continuous watch on the prices as well as the availability of essential consumer goods. The main thrust of government policy is to keep prices in check and improve their availability by stepping up production, particularly in respect of those in short supply to be supplemented by imports as and when needed. Arrangements for releasing additional quantities of essential goods such as sugar, edible oils, etc. through the public distr.bution system during the lean and festival season were also being made.

This was stated by Shri Mohd. Usman Arif, Deputy Minister in the Ministry of Civil Supplies, in a written reply in Rajya Sabha recently. The working of the Public Distribution System is kept under constant review. No significant change in the existing pattern is being envisaged. However, State Governments and Union Territories have been requested to open more fair price shops.

Drinking water facilities problem in villages

DRINKING WATER FACILITIES have been made available in 34,721 problem villages in Madhya Pradesh up to July 1982. Arrangements for drinking water are now being made in the remaining 14,987 problem villages. A target has been fixed to provide at least one regular source of drinking water by the end of Sixth Five-Year Plan (1985) in all the remaining problem villages in the State.

Bharati, the poet-patriot

K. Diraviam

The birth century of the poet-patriot, Subramanian Bharati falls on December 11, 1982. He was the Champion of liberty, equality and universal fraternity. His fiery speeches and patriotic songs amused the people to boycott and burn foreign goods.

He was not only a patriot—poet, but also philosopher and passionate lover. He loves his language, his nation not less than he loved God and humanity.

Division can only spell ruin
Could we hold fast to tis truth,
What more shall we need ?
We'll bow to the Mother.

Religion and caste shou't divide us,
Once born in Bharat,
Be they of the priest-class or any other,
All are the children of the Mother,
We'll bow to the Mother.

Although a thousand castes may flourish here,
The alien shall have no quarter
The Mother's sons may quarrel and wrangle,
yet brothers are they till,
We'll bow to the Mother.

We've learnt that this is our own land,
It will for ever be ours,
No nation shall enslave us again,
We'll prosper serving God, our sole Lord.

"LET ME WRITE THE SONGS of a nation and I care not who makes its laws", said a wise man. For, the songs of today lay down the laws of tomorrow and poets are the unacknowledged legislators of the land. The poet blazes the trail, which the politicians follow plodding along. In India's struggle for independence, the banner of freedom has been held aloft by a gallant galaxy of poet-patriots, two of whom stand foremost, Tagore and Bharati.

His words were power and his songs were fire. His music moved the people to mutiny and roused them to revolt.

It was Shelly who said that poets learn in suffering what they teach in song. The patriot in Bharati writhed in agony, under the oppressive yoke of foreign rule and the poet in him, burst out in song, that was at once a call and a challenge. His words were power and his songs were fire; his music moved the people to mutiny and roused them to revolt.

His song "a heart cannot bear," is a scathing indictment of the slavish life the people had reconciled themselves to Obsessed with fear and laden with sorrow, they had fallen prey to a thousand superstitions. They shuddered at the very sight of a sepoy and skulked away when someone carrying a pistol passed by. In decile servility and cowardly sycophancy, they meekly got up to pay dutiful homage to any one who dressed with flamboyance and walked with a swagger. "The heart cannot bear," the poet lamented, "to see these great people torn by strife and disunity, petty differences and squeamish disputes setting even the son against the father and sowing the seeds of a feud, that was to cast its shadow for generations to come".

We are of the same caste and race. We are children of Bharat all, We are equal in law and status. And everyone is Bharat's king Long live the Republic.

HIS POEM ON THE PRETENTIOUS patriots and presumptuous heroes, rings with denunciation of deceit and revels in the exposure of hypocrisy. The dumb driven masses who had sold themselves to slavery, the false crowd that indulged in facile talk and heroic fibs to cover and camouflage their cowardice, the crowd that talked when it should have toiled, that feared where it should have fought and sighed where it should have struggled, the crowd that grovelled in the dust and revelled in its own impotence that was the crowd that Bharati sang with his sarcasm and scorched with his scorn. He called upon the people to shed fear and fight falsehood. "Even where the skies to fall on your head, have no fear" was the message of courage, this crusader against injustice put into his song, which was the saga of sacrifice. Even as he struggled to destroy the false values that had corroded society and corrupted man's mind, he sought to build up new values, to forge and fashion new holds of sympathy, understanding and love. As Longfellow said, he was a poet with hate of hate, scorn of scorn and love of love.

It is when we drink deep at this fountain of love, that we feel that out of clay, we have been made into men and from men, we have risen as Gods. It is this Gospel of love that binds the highest with the humblest, the lowest with the loftiest and creates a comradeship that is strengthened by common endeavour and unity of purpose. It is in the raptures of this love that Bharati sings of the oneness of all, that are one kin and all one kind, all the people of this august land, that all are of the same worth, all of the same value, all the monarchs of the mighty land. A society that will rise above its class, that will refuse to demean itself into divisions of caste, that will respect the tiller and the toiler and will no longer burn incense to the idle rich, a society where virtue shall be strength and earnest endeavour seek to promote the abiding good—this is the new order of which Bharati dreamt, for which he worked and prayed.

The India of his dreams would have its roots in the past, in the rich culture and noble traditions that had sustained the country for thousands of years. This was the land where our forefathers lived a appy, purposeful life and thought a thousand thoughts, fertile in their imagination, rich in their idealism and faithful in their realism. Shy and bashful maidens have revelled in the cheering coolness of the rivers of this land, and the benign moon beamed with joy at their virgin delights. These damsels had ripened into womanhood to fulfil themselves as mothers and with the sweet words, they spoke, fed their babies with the wisdom of our land. This was the land studded with temples that rose high, offering into the Gods the humble gratitude of men for the life of fulness and fulfilment that they had lived here.

BUT BHARATI WAS NO POET of the past; he was indeed a poet of the future and heralded an era where, enriched with our experiences, we should march forward towards fresh advances in every sphere of life. Love of ancient culture and the yearning for modern progress met and mingled in Bharati's melody. "There was no use", he counselled, "in secretly regaling ourselves with colourful tales of the prosperous past". We should catch up with the most progressive advances in arts and sciences, in thought and literature. Our past shall equip us, not envelope us; it shall inspire us, but not imprison us.

If Bharati was an idealist dreamer, he was also a practical planner. He was not like the nightingle that sat in the darkness and sang to cheer its own solitude with sweet, songs. His songs were not mere invitations to romance and hapsody. There were also the blue prints for progress. Let us walk amidst the silver snow clad mountains, while our ship sail all the western seas. Let us bridge the gaping gulfs and harness the turbulent waters of Bengal to nourish our crops. We shall delve deep into the land and coax the hidden treasures of the earth to bring us prosperity. We shall dive deep in the Southern seas and fish for pearls as bright as wisdom. Let us exchange the tasty wheat grown on the banks of the Ganges for the tender betal leaves of the banks of the Cauvery. We will reward the melodies of the Marathas with the soft, shining ivories of Kerala. We will pay tribute to the glory of the Rajput heroes, with Mysore gold. We will have wealth from cotton and silk, and make earth heave with the fulsome weight of the fruits of our labour. We will span the seas and scan the skies; we will watch the stars and probe the Mars. We will cherish the truth and nourish the arts and sing in ecstacy of Bharath, the land of our birth. In Bharati's poetry, we can find Independent India's Five Year Plans, set to music.

India of his dreams would have its roots in the past, in the rich culture and noble traditions that had sustained the country for thousands of years.

Bharati is a poet of love, a love that does not confine or choke itself within narrow limits, a love strong and serene, soothing and soulful, that uplifted the lover and the loved and carried them forward to greater heights of devoted, dedicated affection, that embraced humanity and reached out to divinity. 'The crow and the pigeon are my kin' claims the poet. His Love of freedom and spirit of equality were born out of this oneness, of this deep identity, his infinite capacity to see one in all, and all in one. The lowliest being was to him as important as the most favoured or fortunate. It was not mere poetic flourish, revolutionary bravado or anarchist frenzy when he declared, "should even one man go without food, we will pull down the whole world."

Bharati was no poet of the past, he was indeed a poet of the future and heralded an era where, enriched with our experiences, we should march forward towards first advances in every sphere of life. What is life without unity ?

In Bharati, then, we have the poet, the patriot, the philospher and the passionate lover, all rolled in one. He loved his language, his nation, no less than he loved God and humanity. But to love he must be free; to cooperate, he must be equal, to create, he must be fearless; to be divine, he must be human

Youths hold a camp in village

A HUNDRED YOUTHS DRAWN from 15 villages of Tiruchirapalli District held a camp in the village of Keela Valadi in Tiruchirapalli District from 11-9-82 to 15-9-82. These Nehru Yuvak Kendra Youth Volunteers, during this 5 days' "Rural Work Camp" period tried to bring forth a few basic amenities to the village population. Having put in 8 hours a day of manual work these youths laid 1KM road connecting the cremation place to Scheduled Caste Hamlet. They also built a stone bridge in this village and removed the thorny bushes on either side of the existing village road. They levelled the ground and converted it into the play-field for the games-events of Volley Ball, Kabaddi & Ring Tennis. A free Medical Check-up Camp was also conducted with the help of Primary Health Centre Staff of Puthur Uthamanur and District Health Officer, Tiruchirapalli.

S. Subramanian Field Publicity Officer Tiruchirapalli

Result oriented plan for social forestry

A. R. Patel

The demand for forest products is increasing as rapidly as forests are vanishing. So farm and social forestry programmes have been receiving special attention. A massive social forestry programme which takes care of fuel, fodder and timber needs of the rural folk and which protects environment has been proposed to be implemented in 100 districts, at an outlay of Rs. 50 crores. The author, while analysing various aspects of social forestry, stresses the need to have intensive research and development efforts backed by appropriate public policy for the successful implementation of the programme.

DURING 1951-52 to 1975-76, the total forest area deforested was 4.14 million hectares. The demand for forest products is increasing as the forests are vanishing. The adverse consequences of indiscriminate deforestation and shifting cultivation have been manifesting themselves in numerous ways like flash floods, lands-slides, soil erosion, silting of channels and reservoirs and their resultant effect on our national economy.

It is, therefore, imperative that farm forestry and social forestry programmes should deserve special attention. The social forestry concept has now been vigorously taken up for action by the Union Government. It has been decided to launch a massive Social Forestry Programme with the aim of meeting the fuel, fodder and small sized timber requirements of rural population as well as promoting environmental protection. A centrally sponsored Social Forestry Programme involving an outlay of Rs 50 crores has been proposed for implementation in 100 identified districts in the country. The programme is expected to promote rural fuel wood plantations over an area of about 2.6 lakh hectares. Nearly 50 crores of seedlings are proposed to be supplied to farmers under this scheme and for 'A Tree-for-every Child Programme'. Here an attempt is made to appreciate various aspects on social forestry and develop a blue print of result-oriented-action plan involving banks, agricultural universities, panchayat institutions and village schools for making this programme a success.

SOCIAL FORESTRY aims at the production of fuel wood and small timber besides provision of grazing, supply of grasses and fodder, thorns for fencing, protection of agricultural lands against erosive action of wind and water. The programme therefore includes (i) raising of trees on bunds, or boundaries of fields in private agricultural lands, (ii) wind breaks. The programme has significant value by way of (i) supplementing production of fuelwood and small timber to meet the increasing demand, (ii) releasing cow-dung as manure, (iii) increasing production of leaf fodder, (iv) creating diverse eco-system by having trees interspersed with cultivation and (v) preventing as also minimising wind erosion.

The adverse consequences of indiscriminate deforestation have been manifesting themselves in nusterous ways like flash floods land-slides, soil erosion silting of canals and reservoirs.

Social and farm forestry is an imperative need now, to reduce the frequency and fury of floods, to increase the availability of fuel, fodder and timber and for promoting environmental protection.

Thus, the practice of forestry should be approached through all its aspects on farm and village land, generally more or less integrated with other farm operations. Forestry has a scope around wells and tube-wells, water-channels, field boundaries, farm-roads and sub-marginal lands uneconomical for crop culture. The cultivators, however, have an apprehension that the trees harm their crops by shade and by harbouring birds and insect-pests which cause damage to the crops. They also feel that the area under village forests will reduce the grazing area for their cattle. However, it can be realised that properly distributed tree growth acts as a foster mother to agriculture, particularly in dry climates, as it protects the crops against the scorching and dessicating effects of wind by breaking wind speed and increasing atmospheric humidity, thereby, making the climate more congenial and pleasant. In fact, properly conserved and managed forests can be an asset to agricultural production.

SHELTERBELTS (ROWS OF TREES or shrubs or of both) and windbreaks (a single row of trees or shrubs) have been well recognised all over the world as the most effective measures against wind erosion, hot and cold waves, snow-drift, frosts etc. They reduce the wind velocity, increase relative humidity

(Contd on Page 20)

Indian economy throug

(A) Basic indicators

1. Population (Millions) in mid 1980	673.2
2. Area (Million Sq. Km.)	3.288
3. Per Capita GNP (1980)	240
4. Growth rate (1960-80)	1.4%
5. Inflation annual rate (1970-80)	8.5%
6. Adult literacy (1977)	36%
7. Life expectancy (1980)	years 52
8. Index of Food Production (1969-70)-100) (1978-80)	101

(B) Growth of Production (1970-80) Annual Average

1. GDP (1960-70)	3.4%
2. GDP (1970-80)	3.6%
3. Agriculture	1.9%
4. Industry	4.5%
5. Manufactures	5.4%
6. Services	5.2%

(C) Structure of Production in 1980 (Percentage share)

1. GDP	Billion $ 142.01
2. Agriculture	37%
3. Industry (of which Manufacturing) (18%)	26%
4. Services	37%

(D) Growth of Consumption and Investment (Average annual growth rate %)

	1960-70	1970-80
1. Public consumption	0.2%	4.2%
2. Private consumption	3.7%	3.2%
3. Gross domestic investment	5.3%	4.8%

(E) Distribution of GDP—1980(%)

1. Public consumption	10%
2. Private consumption	70%
3. Gross domestic investment	23%
4. Gross domestic savings	20%
5. Resource balance	- 3%

(F) Industrialisation—Value added in Manufacturing for 1970 (1975 Prices)

1. Food and Agriculture	13%
2. Textile and clothing	18%
3. Machinery and Trans. equipments	19%
4. Chemicals	13%
5. Other manufacturing	37%
6. Value added in manufacturing	$ billion 15.595

(G) Energy Sector

1. Per capita Energy consumption (1979) (Kg. of coal equi.)		194
2. Annual growth rate in consumption (1974-79)		5%
3. Energy production (annual gr. rate) (1974-79)		5.4%
4. Energy import as % of exports	(1960)	11%
	(1979)	32%

(H) Foreign Trade

1. Exports	$ million (1980)	6,694
2. Imports	$ million (1980)	12,858
3. Trade balance	$ million (—)	6,164
4. Exports (annual growth rate)	(1960-70)	3%
	(1970-80)	3.7%
5. Imports (annual growth rate)	(1960-70)	(—)0.9%
	(1970-80)	2.8%
6. Terms of Trade (1975—100)	(1960)	134
	(1980)	71

(I) Structure of India's Exports (1979-% share)

1. Primary commodities	31%
2. Textiles and clothing	20%
3. Machinery & Trans. equipment	8%
4. Minerals metals and fuels	8%
5. Other manufactures	33%

(J) Structure of India's Imports (1979—% share)

1. Fuels	26%
2. Machinery and trans. equipments	19%
3. Food items	14%
4. Other primary commodities	11%
5. Other manufactures	30%

(K) Origin & Destination of India's total Exports (1980—% share)

1. Industrial market economies	53%
2. Non-market industrial economies	17%
3. High income oil exporters	9%
4. Developing economies	21%

(L) India's manufactured Exports (1979—% share)

1. Industrial market economies	58%
2. Non-market industrial economies	10%
3. High income oil exporters	6%
4. Developing economies	26%
(Value of manufactured exporters $ billion	3.729

(M) Balance of Payment and Debt Services Ratios

	1970	1980
	($ Million)	
1. Current A/c balance (—)	394	(—)3,163
2. Interest payment on external public debt	189	362
3. Debt service as % of exports	20.9	8.9
4. Debt service as % of GNP	0.9	0.6

(N) Inflow of External Capital (1980)

(a) Public and Public Guaranteed	(US —$ Million)
1. Gross inflow	2,477
2. Repayment	636
3. Net inflow	1,841
(b) Direct Foreign private investment	Negligible

World Bank's eyes

(O) External Public Debt and Reserves

	1970	1980
	($ billion)	
1. Outstanding external debt	7.9	17.4
2. (1) as % of GNP	14.9	10.0
	($ billion)	
3. Gross for Exch. Reserves (*8.3 months of import coverage)	10.0	*12.0

(P) Social Parameters (Population)

	60-70	70-80	80-2000
1. Av., annual growth (Net)	2.3%	2.1%	1 9%
2. Projected population	833 mil. in 1990 994 mil. in 2000		
3. Stationary Population (Hypothetical size)	1,694 mil. in 2115		
4. Assumed year of reaching Net reproduction rate of 1%	2020 A.D.		

(Q) Demographic Indicators

	1960	1980
Crude birth rate per 1000	44	36
Crude death rate per 1000	22	14
%change in birth rate	--	18.5%
%change in death rate	--	37.6%
Total fertility rate		4.9%
Married women using contraceptives (%)	12% (1970)	23% (1979)

(R) Labour Force (%)

	1960	1980
1. Per cent of working population (15—64 years)	55	57
2. Labour force in agriculture	74%	69%
3. Labour force in industry	11%	13%
4. Labour force in services	15%	18%
5. Annual growth of labour force (%)	1.5% (1960-1970) 1.7% (1970-1980) 2 0% (1980-2000)	

(S) Urbanization

	1960	1980
1. Urban Population (% of total)	18%	22%
2. Urban Population in largest cities (-do-)	7%	6%
3. Urban Population in cities of over 500,000 persons	26%	39%
4. No. of cities having over 500000 persons	11	36
5. Life expectancy at birth	43years	52years
6. Infant mortality (aged 0-1)	165	123
7. Child death rate (aged 1-4)	26	17

(T) Health Indicators

	1960	197
1. Population per physician	4,850	3,630
2. Population per nurse	10,980	5,700
3. Population having access to safe drinking water	33%(1975)	
4. Daily per capita calorie intake (89% of normal requirement)	2021	

(U) Education

Age Group)	1960	1980
1. % of boys in Primary Schools	80%	92%
2. % of girls in Primary Schools	40%	63%
3. Total	61%	78%
4. Enrolled in Secondary Schools	20%	27%
5. Enrolled in Hr. education	3%	8%
6. Adult literacy rate	28%	36%

(V) Income Distribution (1975-76)

% share of household income

	(Income Share)
1. Lowest 20% had	7%
2. Selcond Quintile	9.2%
3. Third Quintile	13.9%
4. Fonrth Quintile	20.5%
5. Highest 20%	49.4%
6. (Top 10%)	(33.6%)

(W) India's Defence Expenditure (1979)

1. As % of GNP	2.8%
2. As % of Central Govt. exp.	18.1%

(Source : World Development Report : 1982)

Contd from Page 17

regulate the temperatures and reduce evaporation from plants, enhance carbon assimilation and plant growth, fill up ground water reserves, raise water table, improve soil moisture regime, regulate even distribution of rainfall etc. They also effect the soils by way of increase in size of water stable aggregate, pore space and resistance of the aggregates to erosion. All these ameliorating effects result in a healthy soil-water-plant relationship. In the sheltered area the fertilizer efficiency increases by 50 to 100 per cent. In the USSR the shelterbelts are reported to have increased the yields of agricultural crops, fodder grasses and vegetables crops. The belt have been found to be highly beneficial during initial stages of forest plantations also. The belts provide longer periods of grazing to, sheep and cattle resulting in higher milk production, better wool quality etc. For these reasons the shelterbelts are accorded the national importance in the USSR., Denmark and America. Under Indian conditions, 150 per cent increase in crop yields has been reported due to shelterbelts.

Shelterbelts that is rows of trees or shrubs or of both around the farms are very effective against wind erosion, temperature variation, snow drift and frost. They increase the yield of agricultural crops.

While taking up farm forestry programmes, the following suggestions will make them more comparable with the field crops. Generally the effect of farm trees on the kharif crops is less marked than on the growth of rabi crops. This may be due to shade effects, moisture and nutrient exhaustion. In view of this, deciduous trees like mulberry and shisham and narrow crowned trees like eucalyptus may be preferred. Mulberry plantation can also be utilised for sericulture, paper making, sports goods and basket making.

FOR ELIMINATING THE ROOT competition from the adjoining crops, use of rot cuttres is recommended. Dense crowned shady trees and fruit cum-timber trees like jamun, mango, jackfruit, guava and ber may be planted near the wells, tanks tubewells farm sheds and habitations. To avoid the risk of harbouring insect pests and diseases, the trees should be kept under regular surveillance and prophylactic spraying or dusting should be adopted. A eucalyptus has some unique characteristics of its own, as a result of which it has been found favour with the farmers. It is quick growing tree resistant to saline, alkaline and water logged condition and its canopy is not suitable for bird nesting

Social forestry aims at growing ornamental trees for the purpose of providing benefits for the community. Social foestry can be practised along canals, railway lines, road sides, village common land, village approach roads, newly dug drains, camping grounds, school yards, community buildings etc. Lakhs of hectares of land need immediate reclamation which can be planted/brought under social forestry. Most of the states have appreciable area which need reclamation. As not all the area is fit for immediate cultivation it can be utilised for social forestry programmes with advantage. Panchayat lands not suitable for crop cultivation can be utilised for village forests. However, these will have to be protected against indiscriminate grazing and cutting for fuel. This can be overcome by organising cooperative village forest societies on the Gujarat pattern. The Forest Department and Agricultural Universities can provide institutional help and infrastructure for providing expert advise for raising such plantations. Radio and Television media can be utilised to render advice to the people as to what areas should be planted, when and how.

DIVERSION OF SUCH LAND TO forest plantations can be quite remunerative. It has been estimated that an acre of sub-marginal land under eucalyptus plantation can yield in 15 years a net income of about Rs. 18,000 and having various degrees of salinity and alkalinity can also be used in social forestry programmes. Tree species like Acacia nilotica Asadirachtindics, Prosopis juliflora, Burea monosperam, Madhuca indica, Zizi phus species and Salvadora oleoides can grow on saline-alkali lands. Growing of these trees on such deteriorated soils will initiate the reclamation process and improve their productivity and bring some income from such lands. On the waterlogged areas, planting of willow arjun, jamun, eucalyptus, guava, ber etc. are desirable.

For the purpose of variety and beautification, ornamental trees can be interspersed along with timber and fruit trees In this country a large area is subjected to severe water erosion and in these areas sylvipastoral programme can be undertaken. These areas are at present unfit and uneconomical for crop cultivation. The cultivation of Dishrotachys nutens and Kudzu vines has proved beneficial under such situation. Sirate M. Atropurpuream, a legume grass with trailing habit, helps not only in soil conservation but also provides the much needed pasture. These legumes enrich the soil through symbiotic nitrogen fixation. Mimosa invisia—a trailing type shrub—is also very good for erosion control.

A research study on adaptability of various fodder trees in different agro-climatic regions is being initiated in the agricultural universities as also at the National Level Research Institutes. Some of the important fodder trees like Bauhinih variegata, Hardwickia binata, Leucaena leucopcephia are very fast growing species and are known to fix about 200 kg. of nitrogen per hectare.

Diversion of salt affected areas for forest plantation can be quite remunerative. An acre of submarginal land under eucalyptus plantation can yield in 15 years a net income of Rs. 18,000.

IT WOULD BE ESSENTIAL TO survey all the areas which could be brought under the activities/programmes. of social forestry and farm forestry.

Based on the information regarding soil type, the areas available for village forestry may be classified into:

(a) Areas with sufficient soil depth and along the banks of natural water currents can be used for raising woodlots of fuel species and small dimension timber species. (b) Area with shallow soil depths can be reserved for pasture development, (c) road, railways and canal sides, compounds of community places, religious places, residential places and school playgrounds can have shade loving ornamentals, flowering, fruit bearing trees and plants having aesthetic and economic values. (d) Farm forestry can be undertaken in areas along fences and bunds, shelter belts on inter-marginal lands, steep hill slopes, lands abandoned due to impoverished soils either due to faulty cultivation or wind water erosion, eroded river banks etc. These areas may be planted with some crown species yielding fuel, small timber useful for farm houses, wood for agricultural implements and with plants yielding leaf fodder and loppings useful for green manuring.

It is time that concerted efforts are made for protecting our forest wealth with the active involvement of its masses. In the Fifth Five Year Plan the two centrally sponsored schemes viz. (i) development of social forestry—reafforestation of degraded forests, and (ii) pilot projects on mixed plantations on waste-lands, panchayat lands, etc. with an outlay of Rs. 5 crores each were initiated. During the Sixth Plan a centrally sponsored social forestry programme involving an outlay of Rs. 50 crores has been proposed.

The Central and States Governments, through their specialised agency—Forests and Soil Conservation Department—can provide technical guidance and financial assistance.

INTENSIVE RESEARCH AND DEVELOPMENT effort backed by appropriate public policy may have to be made in the area of social and farm forestry so as to (i) restore ecological security (ii) meet fuel, fodder and other domestic needs of the population, and (iii) meet the needs of small and large scale industries. This will call for a coordinated approach involving the Panchayat Administration, District Rural Development Agencies, Project officials of the Drought Prone Area Programme, Command Area Development Projects and Credit Institutions. Motivation and technological package would, in the ultimate analysis, help school children and adults to raise trees in homes, school common land, road side, railway line etc. Agro-forestry programme should help farmers to adopt a wide range of land management system leading to a combination of sylviculture with horticulture or animal husbandry or acquaculture. A well managed forest eco-system in which plants, animals and man co-exist in a mutually symbiotic manner is an essential component of ecological security.

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On account of the Annual Number, there will not be any issue dated 16—31 January 1983 and 1—15 February 1983.

Role of women in population

About 76 per cent of the Indian population still lives in rural areas, the literacy rate of the population being still very low. In 1971 the literacy rate among rural women was 18.69. The social and attitudinal barriers to selling the concept of small family in areas where men and women are not exposed to new ideas are many.

T. N. Srivasdava

IF THE GAINS OF DEVELOPMENT have to accrue in real terms to the people in a country, the rate of economic advancement has to be faster than the rate of growth of population. If poverty persists on somewhat the same level, people start losing faith in the process of development.

The control of population through voluntary adoption of the family planning has been the keynote of the policy ever since the introduction of the planning in India. While the implementation of programme was at a low key during the 'Fifties' the startling rate of growth of population reported in the Census of 1961 necessitated a rethinking on the subject. Faced with such a situation, the Government took up a massive family planning programme with the emphasis on motivation of the eligible couples to adopt the small family voluntarily.

The provisional population figures for the Census of 1981 published recently have shown that the high hopes pinned on the family planning as an effective method of arresting the rate of growth of population have been completely belied. The decadal rate of growth of population for 1971-81 has been 24.75 per thousand. According to 1981 Census, about 76 per cent of the population still lives in rural areas. During the last thirty years—the rural composition of the population has declined only by about 7 per cent. The target groups are thus mainly, rural based. Besides the rural base, the literacy rate of the population, despite an appreciable increase, is still at a very low level. The literacy rate was 46.74 per cent for the male and 24.88 for the females in 1981 as a whole but in the rural areas, the literacy was only 18.69 for the females in 1971 as against 39.45 in urban areas. These factors would by themselves be not so important but in the Indian context they have to be seen in the light of the traditional setting of the village where the behaviour of the families including the target group is determined by the social awareness and attitudes of the elders of the family and the village. The social and attitudinal barrier to selling of the concept of small family in areas where men and women are not exposed to new ideas, are great. It is difficult to penetrate these areas by any form of motivation unless it is supported by a systematic programme of educating people.

An educated woman is usually less closely confined, physically and psychologically, with her husbands family and its narrow familial concerns. She is more likely to feel that she can do something about the conditions of life. Her horizon of information is wider.

Education by itself will not lead to a change in attitudes unless it is accompanied by suitable opportunities for employment. What is required is opening of new vistas for women which could provide whole time employment to them, as salaried workers.

IT IS IN THIS CONTEXT that the role of women as an instrument for the propagation of a small family becomes important. There is no sphere of life in which women play a more important and positive role as in the determination of the size of the family. It is they who bear the burden of bearing and rearing of children. For them it is not merely a biological or social necessity but also a way of life and a useful way of keeping themselves engaged. Control of population would be easier to achieve if emotional and social requirements of women are taken care of by involving them in the social and economic activity particularly after they have fulfilled the necessary and obligatory function of child bearing and child rearing. In other words if women are to adopt family planning, they have to be prepared and provided the basic opportunities for gainful employment outside their home. A different role for women will have to be contemplated besides that of a housewife and mother—be it rural or urban area. The traditional role will have to be recast to suit the need of a small family provided necessary conditions for emotional and social fulfilment are created for women.

What can this role be ? It can only be a dignified participation in the social and economic life of the country. This would mean provision of adequate facilities for education and employment for women, not only in the urban areas but also in remote, backward and inaccessible rural areas. Education helps in the development of personality of an individual and stimulates their thinking power. In the case of women, it throws up wide ranging alternatives to child bearing as sources of emotional and psychological fulfilment. It enables women to appreciate the need and use of contraception in the changed socio-economic context and helps in their adoption. Experience shows that in many Western countries, female education has been associated in reduced birth rate. It increases women's awareness of themselves and enables them to come out from the narrow domain of their families. According to Helen Ware, "Educated wives further contribute to fertility decline because they are more likely to wish to avoid the inconveniences of pregnancy, to share decision making with their husbands, and to reject the claims of their children." (Women, Demography and Development, p. 84). She says further, "A thousand family planning visits will not persuade women to make effective use of contraception if they do not believe that they will gain by limiting the number of their children" (ibid p. 86).

MANDELBAMS WHO HAS STUDIED the fertility of Indian women in the early seventies, has observed that "An educated women is usually less closely confined, physically and psychologically, with her husband's family and its narrow familial concerns than is the woman who is brought into their home as an uneducated girl. She is more likely to feel that she can do something about the conditions of her life. Her horizon of information is wider, if only by being able to read newspaper; her network of communication is likely to be broader, even if it extends only to school friends and kiths and kins. These differences are not, of course, direct, results of her having studied algebra or learned to read another language, but they are potent consequences that help to shape her life and are (more) likely to induce her to limit her fertility". (Human Fertility in India p. 54.55).

But education by itself will not lead to a change in attitudes, unless it is accompanied by suitable opportunities for employment. In the rural areas, women are active participants in the work force though their participation is of supplementary nature. Agriculture has peak and non-peak requirements of labour force. It is only in the peak season that they help men folk in the agricultural operations. During the remaining period, they are engaged in domestic chores It is for this reason that, despite active participation of women in the agricultural operations in the rural areas, it has not resulted in reduction in the birth rate. What is required is opening of new vistas for women which could provile whole time employment to them, as salaried workers. With more and more employment opportunities available to women, outside their home, there would be attitudinal change in the concept of the size of family as out-of-home economic and social commitments will not only lead to emotional satisfaction but would leave little time for child bearing and rearing. Thus, according to Dixon the creation of small scale rural industries would promote reduced fertility. The employment leads to income, skills and social contacts which can give them greater self esteem and alternative social and economic role. This would give women greater decision making power in the family and help them in the adoption of birth control practices, spacing and limitation of the size of family Dixon R: Rural Women at Work: Strategies for Development in South Asia).

A family planning programme aiming at the reduction of birth rate should have a long term and short term projection. As the last two decedes, of intensive compaigning have not resulted in any significant reduction in the rate of growth of population, it is time for rethinking in this direction.

A family planning programme aiming at the reduction of birth rate should have a long term and short term perfection. While in the short run, motivation may be helpful in changing the attitude of small number of families, in the long run it is an investment in women's education and creation of more employment opportunities which would change their attitudes and help them in adopting the norm of a small family As the last two decades of intensive campaigning have not resulted in any significant reduction in the rate of growth of population, it is time for rethinking in this direction. Next twenty years can make a material difference in the whole programme if emphasis is shifted from mere family planning to women's development to achieve the goal of small family.

Computer in Tea

THE USE OF THE Automatic Control Systems (ACS) in tea growing will definitely reduce the production costs for high-grade tea. A computer is capable of finding adequate solutions for a broad range of questions pertaining to the compilation of a rational harvesting schedule based on the potentialities of agricultural enterprises, the capacity of processing enterprises, prognosticated yields and data on the previous days of harvesting. A computer, recommends optimal petterns for tea leaves processing at one or the other factory with due account of their capacity and specialisation by tea grades. The system also recommends optimal transportation routes, and determines the necessary number of tea-pickers and vehicles. From the central ACS headquarters, situated in the district centre of Gali, in Abkhazia (Western Georgia), orders are sent to all collective and State farms and tea factories. Up to now communication was maintained by radio and telephone, but from next year the central ACS headquarters will be using teleprinters, and all information will be processed by computers. The main purpose of the introduction of this system is to reduce the losses and to improve the quality. To achieve this goal, the ACS central headquarters, which possesses the data on the available manpower, production capacity and so on, distribute workers and equipment rationally at working sites so as to avoid "overloads", emergencies, idling of facilities, empty runs, etc. The ACS helps to resolve the problem of spares for tea-picking machines, equipment and vehicles.
(Soviet Features.)

Educated girls' views on family life

Nirmal Sawhney

The National Population Policy of India emphasises the need to give high priority to women's education and population education through schools as well as with the help of audio-visual publicity media for out of school population.

A SURVEY OF UNIVERSITY GIRL students was conducted by the Population Centre, Lucknow. The general objective of the survey was to assess the relationships including differentials between the discipline of study (Arts, Science, Medicine etc.,) and the attitude of girl students towards their marriage plans, desired family size and its composition and acceptance of small family norm.

Students of Lucknow University, Lucknow who were studying in M.A. or M. Sc. or MBBS|MD courses or doing Ph. D. were approached. A total of 278 students were interviewed with the help of pre-tested semi-structured questionnaire schedule. There was almost an equal representation of students belonging to Arts, Sciences and Medicine. Majority of students in all disciplines were Hindus (about 90 per cent) and urbanite.

It has been established that educational attainment has indirect association with the size of family, higher the educational status of a couple, lower is the size of the family.

MARRIAGE PLANS OF GIRL STUDENTS : Since all the selected students belonged to Post-graduate or above classes, they were asked certain specific questions in regard to their marriage plans. Information was collected about their liking for a particular type of marriage (love marriage or arnanged marriage), age at which they will like to get married, how far they will succeed in implementing their marriage plan, and in their opinion what is the ideal age for marriage. Data is presented in the table below :

Item	Per cent respondents			
	Arts	Sciences	Medical	Total
1. *Type of Marriage*				
Love marriage	61.7	71.0	86.7	73.4
Arranged marriage	33.0	27.9	9.2	23.0
No response	5.3	1.1	4.1	3.6
2. *Age (in years) at which they got/will get married*				
Upto 19	0.0	0.0	2.0	0.7
20 to 24	38.3	57.0	64.3	53.2
25 to above	39.4	26.7	32.6	33.1
No response	22.3	16.3	1.1	13.0
3. *Whether they will stick to their marriage Plan*				
Yes	47.9	53.5	59.4	57.2
No	47.9	45.3	29.6	40.6
No response	4.2	1.2	1.0	2.2
4. *Ideal age for marriage (in years)*				
15 to 19	4.2	2.3	1.0	2.5
20 to 24	73.4	73.3	61.3	69.1
25 to 30	21.3	22.1	36.7	27.0
No response	1.1	2.3	1.0	1.4

TYPE OF MARRIAGE : It may be noticed that 73.4 per cent of the girls interviewed favoured love marriage and thus only 23 per cent showed liking for arranged marriage. Analysis according to discipline of study shows that the proportion of Medical students who were in favour of love marriage is found to be higher (86.7 per cent) compared to Arts and Science students (62 per cent to 70 per cent).

AGE AT MARRIAGE : On the question that at what age they will get married, it was found that 0.7 per cent students were already married, they got married before they completed 20 years of age and all of them belonged to Medical group of studies. Further, majority of Science and Medical students who were unmarried expressed desire to get married between 20 to 24 years of age (57 per cent and 64 per cent respectively) and thus only 27 per cent and 33 per cent respectively showed inclination of getting married at the age of 25 years or after. On the other hand, proportion of Arts students who wanted marriage either at the age between 20 to 24 years or 25 years and above is equally distributed (38.3 per cent and 39.4 per cent respectively).

This study helps understanding the views of students and the need for introducing the subject of population education at every level of education.

STICKING TO MARRIAGE PLAN : Students belonging to different disciplines, when probed as to how far they will stick to their marriage plans and will not get married earlier even if their partners insist, gave different views. It is evident that the proportion of Medical students who gave inclination for sticking to their original plans is higher (69.4 per cent) compared to their counterparts in Arts (47.9 per cent) and Science groups (53.5 per cent). Thus there is a possibility that nearly 45 to 48 per cent students respectively of Science and Arts group accept marriage at an early age.

IDEAL AGE AT MARRIAGE : On the issue of ideal age at marriage, it was found that a very small fraction of girl students recommended marriage between 15 to 19 years of age (4.2 per cent Arts, 2.3 per cent Science and 1.0 per cent Medical students). Whereas 61 per cent (Medical) to 73.4 per cent (Arts and Science) students reported that the ideal age at marriage is between 20 to 24 years. A little more than one third of the Medical students (36.7 per cent) preferred late marriage, between 25 to 30 years. The corresponding percentage amongst Arts and Science students was quite low (21 per cent to 22 per cent only).

In resume it can be said that Medical students have more liberal views on the type of marriage, their marriage plans are almost definite and they prefer late marriage as compared to Science and Arts students.

FAMILY BUILDING : The girl students were further asked certain questions on family building issues. Some of the questions were on the duration between marriage and the first delivery, desired number of children, ideal spacing between births, family composition and additional number of children if the desired family composition is not obtained. Their views are shown in Table 2.

Table 2—Distribution of Girl Students on certain Family Building Issues

Item	Per cent students			
	Arts	Science	Medical	Total
1. *Duration between Marriage and First Maternity*				
Upto one year . .	26.6	15.1	15.3	19.1
Two to three years .	55.3	79.1	77.6	70.5
Four years and above .	18.1	5.8	7.1	10.4
2. *Desired family size*				
One child only . .	7.4	2.3	11.2	7.2
Two children . .	78.8	83.7	81.6	81.3
Three children . .	8.5	7.0	7.2	7.5
Four children and above	5.3	7.0	0.0	4.0
3. *Average children desired*				2.1
4. *Ideal spacing between birth (in years)*				
One to two . . .	26.6	24.4	16.3	22.3
Two to three . .	36.2	50.0	44.9	43.6
Three to four . .	11.7	8.1	23.5	14.7
Four and above . .	20.2	12.8	11.2	14.7
No response . .	5.3	4.7	4.1	4.7

DURATION BETWEEN MARRIAGE AND FIRST MATERNITY : Analysis of the data in the above table depicts that a little less than three-fourth (70.5 per cent) of the girl students interviewed opined that the duration between marriage and first maternity should be two to three years whereas 19.1 per cent and 10.4 per cent said that it should be either one year or more than four years respectively. However, differentials in their views according to the discipline of the study have been observed. Though majority of students of all the disciplines of study recommended duration of two to three years between marriage and first maternity, the proportion of Arts students who favoured up to one year duration (26.6 per cent) and more than four years duration (18.1 per cent) is quite high compared to medical students.

DESIRED FAMILY SIZE : With regard to size of family, 93 per cent Medical students recommended family with two children only and the remaining (only 7 per cent) favoured three children family. On the other hand percentage of Arts and Science students who favoured family of two children only was found to be slightly less (86 per cent each). Moreover, none of the Medical student expressed desire for four or more children whereas 5 to 7 per cent of the Arts and Science students wanted family with so many children.

With regard to family size 93 per cent medical students wanted two children only and remaining 7 per cent favoured three children.

IDEAL SPACING BETWEEN BIRTHS : Maximum number of students responded that the ideal spacing between births should be two to three or three to four years (48 per cent Arts, 58 per cent Science and 68 per cent Medical students). About 20 per cent Art students recommended spacing of four years and above which was as low as 11 per cent and 13 per cent in the case of Medical and Science students respectively. Similarly one to two years spacing has been suggested by about one-fourth of the students belonging to Art and Science Groups of studies. Only 16 per cent Medical students suggested the same.

FAMILY COMPOSITION : Of the total students interviewed (278), 80 per cent expressed desire for family composition with one daughter and one son only and nearly 10 per cent wanted family with one daughter and two sons. Desire for two daughters and one son and two sons has been expressed by four students and six students respectively. Not much variations in the views of girls belonging to different disciplines and family composition have been found. Because as many as 87.2 per cent, 88.3 per cent and 91.9 per cent students belonging to Arts, Science and Medical groups respectively, favoured family with one daughter and two sons. Further, four girls are found completely against any child in the family.

VIEWS ON ADDITIONAL CHILDREN : Students were then required to give information whether they would like to have additional children in the family if they do not get the desired family composition. Those who gave positive replies were further inquired about the number of additional children.

Table 3—Views of Students on additional children

Item	Respondents			
	Arts	Science	Medical	Total
1. Liking for additional children (N—278)				
Yes	12.8	13.9	8.2	11.5
No	83.0	82.6	91.8	86.0
No response	4.2	3.5	0.0	2.5
2. No. of additional children (N—32)				
One child	66.7	75.0	75.0	71.9
two children	25.0	8.3	12.5	15.6
three children	8.3	16.7	12.5	12.5

It may be seen that only about 12 per cent of the students expressed desire for additional children in case they do not get the desired family composition. However, the proportion of Medical students favouring addition in the family than the desired size is quite low (8.2 per cent) compared to Arts (12.8 per cent) and Science (13.9 per cent) groups. It was also found that of those who wanted additional children in the family, three-fourth of the Medical and Science students expressed desire for one child only. The corresponding percentage in Arts students is quite low (66.7 per cent). Just like other sub-sections. They were asked, do you favour family planning Medical students are at a favourable situation with better understanding of family building information including negative desire for additional children.

FAMILY PLANNING PROGRAMME : In order to know the views of students on the issue of family planning acceptance, enquiries were made on five questions. They were asked, do you favour family planning programme? If they said yes, data on the methods which were known to them, the source of getting information and the ranking they give to various family planning methods were also collected. Lastly, information whether the students discuss this topic or share this information with their friends or not was also gathered.

Table 4—Knowledge about Family Planning Programme amongst Girl Students

Item	Percent respondents			
	Arts	Science	Medical	Total
1. *Do you favour FP Programme*				
Yes	96.8	93.0	98.9	96.4
No	3.2	7.0	1.1	3.6
2. *Knowledge about available FP Methods*				
Sterilization	22.0	22.5	14.4	19.4
Nirodh	35.2	32.5	37.1	35.1
IUP/Copper T	9.9	2.5	19.6	11.2
Oral Pills	5.5	12.5	15.5	11.2
Self Control	—	2.5	8.3	3.7
No response	25.2	23.7	4.1	17.2
3. *Source of getting FP information*				
Friends and relatives	2.2	28.8	4.1	10.8
Magazine and books	35.2	30.0	87.6	52.6
Radio, T.V. and other publicity media	28.5	15.0	2.1	14.9
Doctor and FP worker	1.1	0.0	0.0	0.4
Hospital	2.2	2.5	1.0	1.9
Others	0.0	0.0	3.2	1.1
No response	30.8	23.7	2.0	18.3
4. *First ranking to FP Methods*				
Sterilization	37.0	54.2	13.8	25.4
IUD/Copper T	40.7	20.8	32.3	31.9
Nirodh	18.5	4.2	27.6	27.7
Oral Pills	0.0	8.3	16.1	11.6
Other Methods	3.8	12.5	10.3	9.4
5. *Discussion about FP Methods with friends*				
Yes, discussed freely	50.0	55.3	71.1	59.7
Yes, discussed indirectly	8.7	5.2	5.2	6.3
Not discussed	41.3	39.5	23.7	34.0

Almost all the students irrespective of their discipline of study approved family planning programme (93 per cent to 99 per cent).

KNOWLEDGE OF FP METHODS : Data on the knowledge about various family planning methods were collected in such a way that priority in their knowledge of the methods can be found out. Thus multiple responses have been obtained. Only first priority responses have been analysed.

It may be noticed that nearly 17 per cent of the respondents did not respond this question. May be they did not know about any of the family planning methods. Majority of those students who did not respond belonged to either Arts group (25.2 per cent) or Science group (23.7 per cent) of studies. Further, a little more than one-third of the respondents reported Nirodh as the first method they knew (35.1 per cent) and thus sterilization and Oral Pills were known to 19.4 per cent and 11.2 per cent students respectively. Differentials in the knowledge of sterilisation, IUD|Copper-T and Oral Pills amongst students of the three disciplines have also been observed. Higher proportion of students belonging to Arts and Science groups of studies gave sterilisation as the first method (22 per cent), compared to Medical students (14.4 per cent) only. Similarly, the proportion of medical students having knowledge about self control, IUD|Copper T and Oral Pills has been found to be better compared to Arts and Science students (19.6 per cent, 15.5 per cent).

SOURCE OF INFORMATION ABOUT FP METHODS : Friends and relatives, magazines and books, and radio, TV along with other mass-media programmes are the three main sources of getting information in which books and magazine topped (52.6 per cent). Discipline-wise analysis of data

(*Continued on page 30*)

Majority of science and medical students favoured marriage between the age of 20 to 24 years.

The public distribution system was evolved out of the necessity felt during the years of shortage when quality was not of much importance. The times have changed now. Consumer wants good quality stocks. Bad quality stocks, lack of availability at all the times and subsequent long queues discourage him from buying from the fair price shops.

Revamping the public distribution system

Navin Chandra Joshi

AN IMPORTANT DECISION TAKEN by the Union Government in the middle of September this year is that vanaspati ghee will not be supplied to the public under the public distribution system and as such, it has now been taken out of the list of items which could possibly be sold through the fair price shops. The decision is mainly due to the constraints of adequate and timely supplies as also the frequently changing prices of vanaspati ghee in the country. On August 11, 1982 a national workshop on 'Productivity in The Public Distribution System' was organised by the National Productivity Council in New Delhi. An impression went round that the public distribution system in the country has not been able to generate confidence among the consumers mainly because of the poor quality of stocks they get at the fair price shops.

Surely, the public distribution system was evolved out of the necessity felt during the years of shortage when quality was not of much importance. The times have now changed and an average consumer wants good quality stocks in return for his well-earned money. He is repulsed by any bad quality stocks offered to him at the fair price shops and goes to the open market where he can get the quality he wants. The productivity of the system could be improved only by exercising control over quality.

Quality control and buffer stocks are essential pre-requisites to make the public distribution system a success. The growing awareness of the government for consolidating the distribution system is encouraging.

THERE IS NO DOUBT THAT the Central Government is earnest in spreading the network of public distribution system throughout the length and breadth of the country. Initially, the scheme envisaged supplying foodgrains, processed edible oils, kerosene and soft coke and some selected manufactured items. A number of essential commodities are now available to the consumers at reasonable prices through the system. However, these are neither uniformly supplied everywhere, nor is their availability guaranteed. The general experience is that one or the other commodity is always in short supply and consumers have to depend on the open market. This situation is due to the fact that there has always been an under estimation of our requirements of scarce materials of all kinds. This has also caused under-utilisation of our production capacities.

It is the availability of items which is providing the biggest hurdle and the example of dropping vanaspati ghee in sheer desperation calls for a serious thinking. The only remedy seems to be to undertake production of all essential articles by the government in the public sector.

We must recognise that creation of buffer stocks of all kinds of essential items is an essential pre-requisite to make the public distribution system a success. Procuring commodities from various private producers and that too at lower price has been found to be extremely difficult. Due to this, the enthusiasm of the Government, the producer and the consumer has been substantially diluted in the viability of the scheme. It is the availability of items which is providing the biggest hurdle and the example of dropping vanaspati ghee in sheer desperation calls for a serious thinking.

THE ONLY REMEDY SEEMS TO be to undertake production of all essential articles by the Government in the public sector. Sooner it is done, the better it would be for the country, as ultimately this would be the only solution to the problem of inflation. In fact, once created, the public distribution system should be taken as an extension of the public sector concept in the area of distribution. Needless to say that with the kind of imbalances existing between the supply and demand for all kinds of consumer goods, the very process of development gets caught in the grip of the vicious circle and inflation makes it all the more appalling. Inflation in poor and developing countries, works as a regressive form of taxation of the most vulnerable section of their population.

The growing awareness of the Government for consolidating the distribution system is encouraging. Its potential for further growth is also quite promising. The system had a turnover of Rs. 1600 crores in

1979 and it is programmed to raise the figure to Rs. 3600 crores by the end of the current Sixth Plan period. The number of fair price shops and other outlets in the distribution system is to be increased to 3.5 lakhs by 1984, with special attention to the remote areas such as the north-east and tribal belts. Indeed, to an economy that is visited by shortages, the need for a permanent, effective and country-wide public distribution system cannot be over-emphasised. However, when the basic items continue to remain in short supply, the very success of planned development hinges on their adequate production, procurement and distribution. Therefore, an appropriate and well-knit organisational structure needs to be evolved in order to coordinate and control the procurement and distribution activities.

THE MAJOR ELEMENTS OF THE system comprise a net-work of procurement agencies percolating to the village level, devoted and efficient personnel, well-coordinated logistics, storage and adequate supplies all the time. There should be a continuous feedback mechanism to act as a control measure for coordinating procurement and distribution activities. A system of compulsory procurement based on graded producer levy seems to be indispensable till production of all items, except agricultural is in the hands of the government. The Government should also keep a constant watch and curb the creation of a parallel black-market in respect of scarce commodities. The best method for applying checks would be to counter the hoarding and black-market tendency by pre-empting the use of scarce materials as well as imports in order to ensure their end-use through uninterrupted supplies to consumers. Fair price shops, cooperative societies and super bazars should be set up to the maximum possible extent so that each has just that number of customers as it can handle without long queues being formed.

The Dagli Committee Report on Controls and subsidies states that the amount of government subsidy has grown in geometrical proportions from Rs. 96 crores in 1970-71 to about Rs. 1600 crores so far. The major beneficiary of controls and subsidies were the 10 per cent of the upper strata of the society.

The system should aim at minimising the inordinate delay or inconvenience experienced by customers in drawing their rations of commodities. Its other objective should be to provide service to the public at the same operative cost which, say, a small street retailer incurs. This is an important aspect of retail marketing which the system will have to take into consideration while revamping itself on a permanent and a viable basis. It will also require dependable calculations and sufficient knowledge of the market forces as a precondition for containing prices. And it is here that the Government's capacity to manage the market mechanism in respect of consumer items is put to an acid test. It is also crucial to ensure that a certain minimum turnover is made in each shop in order to break-even.

IN THIS CONTEXT IT IS IMPORTANT to note that the Dagli Committee Report on Controls and Subsidies states that the amount of government subsidy has grown in geometrical progression from Rs. 96 crores in 1970-71 to about Rs. 1600 crores so far. This Committee found that the major beneficiary of controls and subsidies were the 10 per cent of the upper strata of the society. Therefore, the continuance of these subsidies has become totally inconsistent with the government's policy of helping the weaker sections of the society. Now there seems to be an urgent need to review these subsidies and the types of beneficiaries to be covered under the system. Also, operational economy needs to be effected through scientific storage and planned transportation of distribution.

The continuance of these subsidies has become totally reconsistent with the governments policy of helping the weaker sections of the society.

Perhaps, the Government needs to go in for the nationalisation of wholesale trade in respect of all essential consumer articles. The wholesale trading organisation of the public sector will have to demonstrate that its margin of profit is much more than what the private sector was making. Hence, the distribution system will require efficient management with business prudence. And more than that, it will need to function as a countervailing factor to discourage speculative activities in trade while also ensuring a steady growth in production. If the full capacity for production and imports is not utilised by the private sector, the Government will need to step in and undertake the activity the whole hog. The existing provisions of the Essential Commodties Act and those relating to checking black-market must be strictly enforced. ☐

Timely Help

THE AGRICULTURAL DEVELOPMENT BRANCH of State Bank of India, Karaikal has extended help to Niravi village of Karaikal district in Pondicherry. Govindaraj and five others of Niravi village borrowed Rs. 100/- each from the Bank. They purchased bamboos at a cost of Rs. 12/- (Twelve) each. With each bamboo they made five baskets. Each basket was sold for about Rs. 5/-. This has assured them constant income. Since almost all the family could easily make about 10 basket a day.

State Bank had also extended loans to women of Niravi village for making papada, pickles etc., The rate of interest being less, they were able to pay back the loan in easy instalments.

V. Govindaswamy Field Publicity Officer Pondicherry.

Lessons we must learn from Japan

S. A. Sapra

We have many things to learn from Japan and the Japanese way is the only way to us if we are to achieve some measure of success in our battle against poverty. Given below are excerpts from an article published in the Economic Times. The article has relevance to all of us in today's context, especially in view of the fact that the year 1982 has been Productivity Year and all-out efforts are being made to get the concept of productivity deeply embedded in our mind.

WHAT CAN WE LEARN FROM JAPAN ? We in India have undoubtedly many things to learn from Japan and one can unhesitatingly say that the Japanese way is the only way open to us if we are to achieve some measure of success in our battle against poverty.

Around 1930, Japan was a poor country but today it is the third richest country in the world in terms of GNP. How has Japan achieved this miracle? Higher and higher productivity is the key to their success.

India is the ninth poorest country in the world community of 181 nations in terms of per capita gross national products. The alarmingly low rate of developments is another cause for worry. But we need not despair on our plight. Japan has proved that poverty can be abolished. Around 1930, Japan was a poor country but today it is the third richest country in the world in terms of GNP. How has Japan achieved this miracle? Higher and higher productivity is the key to their success. The Japanese workers take real interest in the work. This results in improvement in productivity without any effort.

The Japanese are considerate to the workers, they encourage initiative, they are informal in their approach. They attach the greatest importance to team spirit and cooperative efforts. The individual does not exist, it is the group that matters. All achievements are group achievements, all failures are group failures. They provide for continuous training. In such an atmosphere, the individual's as well as group productivity improves endlessly. This is one of the secrets of Japanese productivity. Their quest for knowledge is another contributory factor for improvement in productivity. The urge for excellence in day-to-day work is a part of the Japanese way of life. They bestow maximum possible care even on the maintenance of sanitary facilities. They also seek perfection in whatever they do.

THEY HAVE A RARE PASSION for beauty and cleanliness. In Hitachi, the foundry workers have developed splendid flower beds around their section which they tend during the lunch hour. The foundry is otherwise a dreary place with fumes, dust and dross to work in, particularly, as females do not work there. Cleanliness, neatness and beauty are enlivening, energising and imparting meaning to even routine activities.

The Japanese believe in depth study of any problem before finding solutions. They believe that the diagnosis must be made correctly before proceeding with the treatment. If the diagnosis is wrong, the best treatment would be of no avail. They are always prepared to learn from others. The unique decision-making system in Japan, that is, decision-making by consensus makes everyone concerned deeply and truly involved and committed to a decision.

The superlative quality of Japanese goods is the secret of Japan's enormous success in the export market. At the Matsushita Electric, workers have become so quality-conscious that they have the authority of a quality control inspector. There is no idle time whatsoever in Japan. The Japanese railways are well known for their unbelievable standards of punctuality.

The unique decision-making system in Japan, that is, decision-making by consensus makes everyone concerned deeply and truly involved and committed to a decision.

IN JAPAN, PERSONNEL MANAGEMENT is considered to be the most strategic aspect of Management. Personnel management does not merely mean provision of welfare facilities such as housing and canteen. In addition to these mundane matters, it entails development of men, their knowledge and skills and their cooperative spirit. And above all, people must be made aware of the vital importance of their day-to-day work. In this respect, we have sadly ailed. People are simply drifting away from work. The sense of responsibility is decaying.

A social democratic revolution has taken place in Japan, which is yet to happen in the U.K. where the trade union movement originated. One of the cardinal principles of British trade unionism is that the primary function of a trade union is to oppose the management which is deemed to be oppressive, exploiting the workers continuously. The British workers, therefore hate his foreman who represents management on the shop floor. To a great extent, we have inherited this thinking which is detrimental to our national interest.

If a worker is refused leave by a foreman on grounds of urgency of work, in Japan the trade union representatives would support the foreman whereas elsewhere the union will consider this as an infringement on the worker's right and resist it.

The Japanese trade unions preserve their independence but do not hate the firm. They are, on the contrary, proud of their firm. Even the union song may refer to the firm in affectionate terms. The Japanese management shows genuine concern for the welfare of its workers. It is constantly saying to the workers : Let Japan be the most prosperous country in the world and you will share in the profits resulting from your efforts.

JAPANESE MANAGEMENT IS RESPECTED by the workers. It enjoys their confidence. Japanese unions realise fully that the management and unions have common long-term interests in higher productivity. They do realise that the prosperity of the workers depends on the prosperity of the nation and the firm. What hampers productivity ultimately harms the workers themselves. The unions accept the need for hard work, higher productivity, pride in skill and high quality of goods.

If a worker is refused leave by a foreman on grounds of urgency of work, in Japan the trade union representatives would support the foreman whereas elsewhere the union will consider this as an infringement on the worker's right and resist it.

The trade unions have on the whole shown a great sense of responsibility and statesmanship of a high order though there have been strikes and labour unrests occasionally. When the Government had to restrict the money supply during 1974—76 in order to check a runaway inflation, the trade unions moderated their wage demands to accord with the new conditions and willingly accepted a reduction in the annual wage increase.

When the Japanese Government had to restrict the money supply during 1974—76 in order to check a runaway inflation, the trade unions moderated their wage demands and willingly accepted a reduction in the annual wage increase.

Unless there is improvement in productivity and in national income, the advantages secured by one group of workers may be at the cost of less organised sectors of the community. Further strikes and lock-outs have a dampening effect on the attitude towards work. The urge for excellence in work, which is not very strong in India, is further blunted by repeated stoppages of work. Work is a disciplining force, the absence of which can be demoralising. Further every strike|lock-out entails loss of production, which a poor country like India can ill afford. More specifically India with a per capita GNP of $ 190 cannot afford to follow a policy which, for instance, the UK with a per capita GNP of over $ 6300 can adopt. A rich family can afford to waste some food but not a starving one.

Our perilous economic situation demands greater relations, with all out cooperative efforts to improve productivity. Prolonged industrial strife is self-defeating at this critical juncture. It can only worsen the plight of the poor.

(Courtesy : HMT News Digest)

Educated girls' views

Contd. from page 26

show that Medical students mostly came to know through magazine and books (87.6 per cent), whereas in the case of Arts students in addition to books and magazines, Radio and TV has also played an important role (28.5 per cent). For the Science students, the main sources of information have been magazine and books (30 per cent) and friends and relatives (28.8 per cent).

On the basis of the findings of this survey, it may be summarized that the post graduate university girl students have mostly clear knowledge about family building concepts including small family norm. They have almost definite plan about their marriage. The girl students are well informed about the age at marriage, duration between marriage and first maternity, spacing between births, desired family size and family composition also. As far as family planning programme information including its acceptance is concerned they favoured the programme, had some knowledge about the methods of family planning and also expressed their preferences for various methods. Therefore it may be inferred that there is every possibility that they will plan their families later on when they enter into the married life.

The present study helps understanding the views of students, need for introducing the subject of population education at every level of education and also accelerating the educational media for illiterate masses particularly youth. By this approach, it is hoped, that the ultimate goal of birth reduction would be achieved. □

Economic Notes

Guidelines for district level planning

THE PLANNING COMMISSION has set up a 14-member Working Group with Dr. C. H. Hanumantha Rao, Member Planning Commission as Chairman, to prepare guidelines for planning at district level in the country.

The Working Group has 14 members comprising Central and State officials and experts in the field. The Working Group will define the scope and content of district planning in the context of State planning and delineate the procedure for decentralised planning at the State level to make the content of district planning operational. The Working Group will also devise the various steps in district planning and indicate methodology for each State and suggest the methodology for integrating block level planning with district planning. In addition, the Working Group will recommend the procedure for nesting the district plans into the State plans.

The Working Group has to submit its report to the Planning Commission by March 31, 1983.

Tourist facilities in N. E. Region

SPECIAL EFFORTS have been made by the Ministry of Tourism during the last one year to develop tourist facilities in the North-Eastern Region. Tourist Offices have been opened at Gauhati and Shillong. Decisions have been taken to open such Tourist Offices at Imphal and Itanagar. Inter regional travel has been made considerably more convenient with the introduction of direct air services between Imphal and Gauhati in the North Eastern Region with Delhi on a Daily basis.

Public Sector to promote Family Welfare

THE PUBLIC SECTOR UNDERTAKINGS and voluntary organisations should lend greater cooperation and participation in the family welfare programmes. This was among the recommendations made at the end of the two-day Conference of the State Mass Education and Media Officers in New Delhi. For voluntary organisations which were trying to popularise the family wtlfare programmes in rural areas, the conference recommended suitable pattern of grants in aid. The other recommendations of the Conference included institution of awards for outstanding work in the field of communication for popularising the programme.

16 per cent growth in exports

India was able to achieve a 16 per cent growth rate in exports in 1981-82 as compared to a growth that rate of less than 4 per cent in 1980-81. Imports in 1981-82 increased at a rate of about 8 per cent and the trade gap was marginally reduced as compared to 1980-81.

Record Production by ITI

The Indian Telephone Industries Ltd., (ITI) has shown a record performance during 1981-82. The value of production in the ITI Units rose to Rs. 159.30 crores from Rs. 94.55 crores in the previous year and the profit before taxes to Rs. 17.43 crores from Rs. 1.93 crores.

While the turnover of the Bangalore Complex, for the first time, crossed Rs. 100 crore mark, the Naini, Palghat and Rae Bareli Units showed substantial increase in sales. The Srinagar Unit, for the first time, recorded a turnover beyond one crore rupees by sale of telephone instrument and spares.

The Board of Directors had proposed a dividend of 8 per cent on paid-up Capital. This would involve a payment of Rs. 1.20 crores as dividend.

Lime stone Deposits in M.P.

INTENSIVE EFFORTS are being made by the Department of Geology and Mining in Madhya Pradesh, for discovering minerals in the State. In 6 districts, mines containing 1480 lakh tonnes of limestone have been discovered. They include Semariya in Durg district of Raipur division, Bapwar in Sidhi, Ramsalaiva in Damoh, Hathanapur Kathotia in Narsinghpur and Sabalgarh in Morena districts.

IRD Programme in 200 blocks

KHADI AND VILLAGE INDUSTRIES COMMISSION (KVIC) has identified about 200 blocks where Integrated Rural Development programme is expected to be started during the current year. The number of blocks is expected to increase to about 500 during the next year.

Rs. 1.21 crores for houses for plantation works

THE MINISTRY OF WORKS AND HOUSING has released an amount of Rs. 1.21 crores for the current financial year for implementation of the Central Plan Scheme of Subsidised Housing for Plantation Workers. This release covers four States, namely, West Bengal, Assam, Kerala and Karnataka.

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Books

Regional Planning

Regional Planning: Explorations in Agriculture and Industry; Baldev Singh, Oxford and IBH Publishing Company; New Delhi 1981; pp. xvi × 247, Price Rs. 50.

DR. BALDEV SINGH'S REGIONAL PLANNING is a statistical exercise in agricultural and Industrial development of Sunder Nagar district in Gujarat. It is an outcome of a research project sponsored by the Indian Council of Social Science Research, carried out at the Sardar Patel Institute of Economic and Social Research, Ahmedabad. The study is, as Prof. D.T. Lakdawala has rightly pointed out in his foreword, an interesting application of economic and statistical machinery for policy use. But one wonders whether the findings of such a study can really and effectively be incorporated in National District Planning Programmes. This is primarily because the finding are rather stereo typed or too reactionary or not well articulated. Prof. Lakdawala himself has opined that many of the author's applications only corroborate findings of other studies whilst those relating to irrigation with regard to its potential for employment generation as well as of small farms hiring more labour than large farms needed critical examination.

The study is divided into 5 parts dealing with (i) District Economy, (ii) Mechanics of farm sector growth, (iii) Industrialisation of backward region, (iv) Planning for Rural Development and (v) Regional Development Planning Strategy. While dealing with these aspects of the district development, Dr. Baldev Singh has provided plethora of statistical details but he has not been very much concerned about drawing valid practical inferences from many of them. However, some of the conclusions drawn from them highlight several contradictions in the planning efforts of the district.

Dr. Baldev Singh has stated that Sunder Nagar with a population of 8.45 lakhs in 1971 forming 1.44 lakh households living in 1.41 lakh houses, scattered in 11 towns and 648 villages is underdeveloped in spite of several programmes launched for its agricultural, industrial and rural development. He has indicated that the per capita income of the district rose from Rs. 305.58 in 1959-60 to Rs. 539.79 in 1970-71 during which period the share of Primary Sector increased from 50.51 per cent to 61.89 per cent, but employment opportunities failed to match with population growth; progress in secondary and tertiary sectors had also been disappointing. The provision of governmental assistance with regard to credit availability, supply of agricultural and industrial inputs and access to higher technology have not made any significant impact in removing the relative backwardness of the region.

With regard to agriculture, it has been stated that the growth rate of output of crop sector during pre-green revolution period i.e. 1950-51 to 1964-65 was 10.3 per cent which became (-) 3.1 per cent for the period 1965-66 to 1974-75. Obviously, therefore, the universal advantageous repercussions of the green revolution cannot be postulated for all parts of the country. The success of such a programme would depend on many special factors pertaining to a region which may not be available in many underdeveloped parts of the country. He has further indicated that the variations in the value of crop output around the annual mean year output in Sunder Nagar district was 14.6 per cent. The variations in productivity was 14.2 per cent while the variations in gross crop area was only 10.6 per cent. From this one can draw a conclusion that the destiny of agricultural farmers on which a large population of Sunder Nagar district (as well as of the country) depends on vagaries of nature and other factors than the several economic programmes generally being implemented for such areas.

With regard to industrial growth, it has been observed that the number of industrial units in Sunder Nagar increased from 199 in 1960 to 785 in 1975. On an average these firms produced an annual gross output of Rs. 13.68 lakhs, and installed fixed capital of Rs. 4.99 lakhs and employed a labour force of 36 workers. Overall profit output ratio was 0.56 per cent which by no means can be considered unsatisfactory. Such a rate of growth of industries has however failed to make an impact on raising the standard of living and earning capacity of the people. Among the various causes for this drawback one could draw attention to the conclusions drawn by Dr. Baldev Singh namely "only 3.7 per cent of the industrial output was consumed within the district." This shows that the industries located in the area had been without base in the local requirements, rather they depended upon external force to a great extent.

Drawing the attention to some of the weaknesses of regional planning in the district, the author has indicated that the district development programmes of Sunder Nagar has certainly attracted new industrial units into the region while keeping the existing units intact but "the growth stimuli injected into the regional economy by various policy instruments have failed to break the vicious circle of regional backwardness" (page 141). Regarding the irrigation operation Dr. Singh has stated that "though irrigation operations involve additional labour, these do not add to regional employment" (page 198). Accepting the urgency of regional development in order to eradicate rural poverty and regional facilities and growth in industrial establishments did not generate stable income and increasing employment opportunities, one is indeed to ponder over the question of evolving an effective planning strategy for such areas.

Bepin Behari

In our Issue dated November 16-30, 1982, on page 57 the name of the reviewer of 'Asian Games', Shri Vimal Suneja's was left out inadvertently. The omission is regretted.

-Editor-

Introducing India

Introducing India; by K. Ramakrishnan; Publications Division, Government of India; PP. 88; price Rs. 50.

IN THE FIRST PLACE, it is not clear who the author had in mind for his audience when writing this brochure the general reader, the foreign visitor to India, students ?

The impressive get-up, the art paper in which it is printed, the lavish sprinkling of beautiful colour pictures, the simple language of the text-all would suggest an attempt to woo the foreign reader. If this is so, the attempt seems wasted. For example, will the average foreign reader be interested in the details of the economic condition of the country-how many are literate and how many villages are electrified and so on ? If the intention was to give him these bits of information, why not place the whole picture before him and let him arrive at his own conclusion ? Why make statements that belie the truth? When referring to the electrification of Indian villages, the author says : "43 per cent have been electrified, leading to rural prosperity". Would the reader be so uniformed as not to realise the true state of Indian villages?

If the book is meant for school students, it need not have been so ecological. The author should have avoided making misleading statements. A brief 30-page sketch of Indian history since independence is full of them. On page 6 he says: "though short-lived the Greek authority in India saw the rise of nationalism and the need for a strong Central Government". It is anachronistic to apply the term "nationalism" for the 4th century B.C. The concept of India as a nation came much later. On page 20 he says, referring to the 1857 mutiny : The seeds of a peaceful revolution were sown, culminating in the struggle for independence, led by Mahatma Gandhi and based on his ideals of truth and non-vilence' "The seeds of a "peaceful revolution" were not sown then and whether or not India really achieved independence through "truth and non-violence" alone is a debatable point.

The author further says : "The revolution was made possible by the social reforms, which Indians had introduced for themselves." (Page 20). Indians never introduced "for themselves" any social reforms. Yes, social reforms were pioneered by men like Raja Ram Mohan Roy. But they were ahead of their times and society resisted their ideas. Again on page 29, while speaking of the integration of Indian States, the author says that though most of the princes merged with India, "a little more persuasion were needed in the cases of Hyderabad, Junagadh by a combination of force and manoeuvre and that Kashmir is even now not a settled question in the sense that though it is legally a part of India, our neighbour keeps raking it up now and again in the United Nations.

The book is written lucidly but unfortunately borders on official propaganda. This is the kind of book which is not calculated to inspire confidence. An image cannot be built on mis-statements and misinterpretations and official chroniclers should learn to be truthful to themselves and to history.

Prabha Rani

A pat on PAT

Project Appraisal Technique; by R.L. Pitale, Published by Oxford & IBH Publishing Co., 1982; pages 248; Price Rs. 75.

IN A CAPITAL DEFICIENT country where the allocation of investment to important projects is a desideratum for successful harvest of results, the book under review analysing factors involved in investment decision making at various levels is a welcome addition to the growing literature on project appraisal techniques (PATs).

The author, shri R. L. Pitale, belonging to the Indian Economic Service, has had a brilliant academic career and was with the Industrial Development Bank of India when he was working on this book. The book is divided into two parts, one dealing with investment criteria and financial and economic analysis of the project and another comprises of case studies to explain the application of project appraisal techniques.

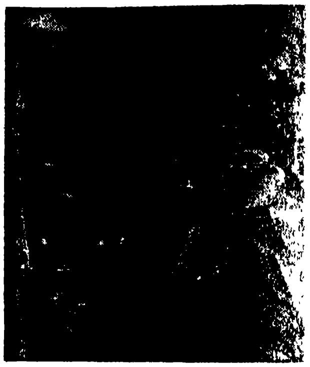
Defining PAT as a mechanism to maximise production and ensure equitable distribution from a social point of view, the author states that in view of the increased awareness about the use of resources and returns obtained, the study of project appraisal technique is germane to the present day planners and policy formulators.

The author contends that investment decisions in reality are based on the appraisal and evaluation techniques. Appraisal is in the area of experimentation while evaluation is in the realm of acquired experience Investment decisions taken on the basis of evaluation may be in the area of a prior judgement and evaluation offers guidelines for further investment decisions. In the case of appraisal, the investment decision is not in the area of a prior judgement.

Shri Pitale argues that the pricing of factors of production is at the basis of project investment with respect to the cost aspect. In assuming prices different from market prices which the economists allude to as 'shadow prices accounting prices', public investment decision differs from private investment, as the former considers efficient use of resources as the most important factors in taking investment decisions rather than profit alone as the criteria. The case studies incorporated into this book range from report on lift irrigation on Sangli district (Maharashtra), Pochampad Command Area (on far) Development project (Andhra Pradesh) farm mechanisation (tractorisation) project in Aurangabad district (Maharashtra) and the OECD study on 'sulphuric acid and super phosphate plant' about an Indian entrepreneur. This study is unique as it does not involve any calculations but is simply an account of the constraints confronted in actually carrying out a project, from the moment when the idea of the project was conceived up to the time when it is commissioned.

Although the book under review is replete with some basic cues on PATs that are bound to be of use to students of management, economics and engineering as well as planners, the mere incorporation of various PATs without any apt comments is likely to sap the zeal of enterprising readers who would like to be informed of the underlying idea behind such an exercise. The book ought to be rid of its few glaring printers' devils when it is reprinted.

G. Srinivasan



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Quenching thirst

THE objective of this programme is to ensure safe drinking water to 1.52 lakh villages identified as suffering from chronic scarcity of having unsafe sources of water. During the Sixth Plan period, efforts would be made to cover all the identified problem villages with at least one source of safe potable water available throughout the year.

According to the quarterly progress report, progress recorded in the implementation of the programme upto the end of September 1982 is as follows :

Number of villages targetted for the year 1982-83	33,848
Achievement upto the end of September 1982	14,842

As we go ahead with 20-point programme

Social forestry

THE objective of this point is to implement vigorously programmes of afforestation, and the development of biogas and other alternative sources energy. According to the national forestry policy, we should have an optimum of 33 per cent of the total land area under forests. But we have only about 22.8 per cent of the total area.

Under the Sixth Plan, centrally sponsored scheme on social forestry including social fuelwood plantations has been undertaken in 100 districts at a cost of Rs. 100 crores. According to the 20 Point Programme implementation quarterly progress report, the progress recorded upto the end of September 1982 is as follows :

Target set for 1982-83	1,93,735 crores trees to be planted
Achievement upto the end of September 1982	1,50,434 crores trees planted

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The Prime Minister, Smt. Indira Gandhi is seen glancing through DPD Publication, "The Story of Jawahar Lal Nehru" in pictures presented by Shri P.B. Barthakur, Director, Publications Division while she visited the Division's Book Stall at the Children's Book Fair held in New Delhi on November 14, 1982.

THINK of the great task before us and of the exciting problems that face us in India. All out people must have equality of opportunity, and therefore, the barriers, whether they are barriers laid by elation or caste, or state or language, must not be allowed to come in the way. We should think of this country of ours as a big family the members of which ought to cooperative with each other, and we should ever cherish the idea that the whole family flourishes and not merely a few persons in it. You have to think therefore what you have to feel actively that you are a partner in the tremendous undertaking.

rling of children

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Achievements and prospects of sixth plan

Self-employment increases Productivity

Recession in India, causes and cure

also

Pulses need multi-pronged strategy.

Role of employer in industrial relations.

Gujarat poised for prosperous era.

Regd. No. RN 949/57

As we go ahead with 20-point programme

Shelter for the poor

The Sixth Plan envisages direct public sector assistance for housing the economically weaker sections of the population. The strategy is to provide 'sites and services' scheme with enough funds for a minimum structure.

A sum of Rs. 485 crores has been earmarked in the plan out of a total public Sector outlay of Rs. 1,491 crores for housing. About 16.2 lakh families are expected to benefit from this proposed outlay. Till the end of September 1982, 2,62,477 house sites had been distributed and 36,214 houses had been allotted. □

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Checking Population growth

The constitution of India directs the Central and the State Governments as provided under Seventh Schedule to make laws to promote "population control and family planning" under its main clause 20 "Economic Social Planning".

The population has gone up from 34 crores in 1947 to about 70 crores in 1982. At the current growth rate the population will cross the 100 crore mark by 2000 AD. The Sixth Plan document has laid down the goal of reducing the birth rate to 21, the death rate to 9 and the infant mortality rate below 50. This target will require that the percentage of couples practising family planning should go up from 22.5 per cent to 36.5 per cent by 1984-85.

It was targetted to sterilise 44,56,800 persons by 1982-83. Upto the end of September 1982, 12,00,200 persons had been sterlised. □

YOJANA

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Achievements and prospects of sixth plan

S. B. Chavan

The aims and objectives of the Sixth Five Year Plan are well known. It aims at a growth rate in gross national product of 5.2 per cent per annum: this will be achieved through a growth rate of a little less than 4 per cent in agriculture and about 7 per cent in mining and manufacture. Shri S. B. Chavan, identified the problem areas where corrective action would be required, in his statement made on the Lok Sabha while initiating a debate on the Sixth Five Year Plan on November 2, 1982. Here is the text of his statement.

THE PLAN DOCUMENT HAS been before the country since February 1981. I had given notice thrice to discuss the Plan but there was no time to discuss. We have also presented to Parliament the annual plans for 1981-82 and 1982-83, which review the performance of the economy in 1980-81 and 1981-82 as well. Currently, a mid-term appraisal of the Sixth Plan is in progress with a view to assessing the up-to-date performance and determining the tasks that should be accomplished in the remaining period of the Plan. In this appraisal, we shall also identify the problem areas where corrective action would be required. We have also initiated action for the formulation of the Annual Plan for 1983-84.

The measure of a Plan is not intention but achievement, not allocation but benefit. We are determined to implement this Plan with steadfastness of purpose.

—Smt. Indira Gandhi.

The main features of the Sixth Five Year Plan are well known. It aims at a growth rate in gross national product of 5.2 per cent per annum; this will be achieved through a growth rate of a little less than 4 per cent in agriculture and about 7 per cent in mining and manufacture. The achievement of these targets will require a considerable effort to make fuller utilisation of capacity which already exists in the system and to provide for additional capacity in agriculture and industry as well as in power and transport. Vigorous efforts will have to be made to improve the working of the infrastructure consisting, among others, of the vital energy sector and transport facilities. It is in this context that the Government has adopted an accelerated oil development programme and the Sixth Plan target of crude oil production of 21.6 million tonnes by 1984-85 has been raised to 27.52 million tonnes.

THE ECONOMY SHOWED A significant recovery in 1980-81. In 1981-82, it consolidated the process of recovery and gathered substantial additional strength. There was an impressive improvement in the infrastructural sectors of energy and transport, accompanied by a further increase in agricultural and industrial production and a marked decline in the rate of inflation. The gross domestic product, which had declined by about 5 per cent in 1979-80, increased by 7.5 per cent in 1980-81 and is estimated to have gone up further by 4.6 per cent in 1981-82. The average growth rate for the first two years of the plan was about 6 per cent per annum which is higher than the plan target.

The plan also seeks to ensure that the benefits of growth are widely distributed and, in particular, that the condition of weaker sections is improved. Reduction, and eventually removal, of poverty has been the prime objective of planning in India and the Sixth Plan gives it the highest priority.

The strategy of the plan is to secure reasonably rapid growth in the productive sectors of the economy and support the programmes which aim at amelioration of the conditions of the poor. We are committed to maintain and strengthen the redistributive bias of public policies, be they in the sphere of taxation, Government expenditure, pricing or licencing. These instruments will be fashioned so as to secure the requisite increases in production and a redistribution of benefits in favour of the poor.

The programmes of development themselves seek to integrate these objectives. Thus, there are a number of programmes of agricultural development meant to further strengthen its productive base through increased irrigation, larger consumption of chemical fertilisers, use of improved seeds, wider dispersal of bank credit and so on. At the same time, steps will be taken to ensure that the input delivery systems reach the small and marginal farmers and rural artisans. Too often we have seen that the benefits of development schemes flow to the relatively better-off sections to the neglect of the small and marginal farmers and the landless labourers. It will be the endeavour of Government to check this tendency and to ensure that the benefits flow to the most needy and deserving sections of the people

The achievement of targets set in the Sixth Plan will require a considerable effort to make fuller utilisation of capacity which already exists in the system and to provide for additional capacity in agriculture and industry as well as in power and transport.

REDUCTION OF POVERTY requires a massive increase in opportunities for employment, particularly in the rural areas. Land-based occupations such as dairying, piggery, sheep breeding, horticulture and the like will be promoted through the integrated rural development programme which now covers the entire country. It is proposed under the programme to provide benefits in the form of subsidies and bank finance to 600 families in each year of the plan per block—400 families will benefit by schemes in agriculture and allied activities, 100 families in village and cottage industries and another 100 in the services sector. The programme would benefit 15 million families during the Sixth Plan period, for which Rs. 1500 crores have been provided in the plan, to be shared equally between the Centre and the States. Under this programme, 2.8 million families and about 3 million families were assisted in 1980-81 and 1981-82 respectively.

The strategy of the Plan is to secure reasonably rapid growth in the productive sectors of the economy and support the programmes which aim at amelioration of conditions of the poor

In order to benefit the landless and the marginal farmers, who face the problem of seasonal unemployment, the National Rural Employment Programme is being implemented with the objective of creating 300 million to 400 million mandays of employment per year during the Plan period. The NREP has been so designed as to create durable assets in the rural areas with the help of surplus labour. During 1980-81, 424 million mandays of employment were generated under the programme. In 1981-82, 345 million mandays of employment were generated. Further, special attention is being given to problems faced by the Scheduled Castes and Scheduled Tribes for which substantial resources have been provided in the Sixth Plan.

The Plan also lays emphasis on the Minimum Needs Programme, since the basic minimum needs have to be satisfied before any further progress can be made. The programme covers mainly extension of primary education, nutrition, public health, rural water supply, rural roads, rural electrification and housing for the landless. A total provision of Rs. 5,807 crores has been made for this programme in the Sixth Plan.

STEPS ARE ALSO BEING TAKEN to reduce regional disparities. Among other measures, mention may be made of area-specific programmes like the Drought Prone Areas Programme, Desert Development Programme, Hill and Tribal Area Development Programmes and programmes of the North Eastern Council.

The employment projections of the plan show that the labour force will increase at 2.54 per cent per annum while employment will go up by 4.17 per cent per annum. The employment situation should, therefore, improve over a period of time. In the Sixth plan itself, new employment equivalent to 34 million standard person years would be created ; the increase in labour force also works out to 34 million. Thus, there would be no increase in the backlog of unemployment. Also we have measured employment in standard person years i.e. employment for 8 hours a day for 273 days in a year. In practice, however, not all find employment of this nature. If allowance is made for this, the backlog of unemployment measured in the usual way might come down during the plan period. Effective implementation of the plan, is however, essential for achieving the employment goals that we have set for ourselves in the Sixth Plan.

One thing is clear and has been clean for several years. All our plans of development will come to nought if we are not able bring about an effective restraint on the growth of population.

Hon. Members are aware that the results of the recent census show that the aggregate growth rate in population has not come down. We are looking carefully at the results to see in what manner the programmes of the Sixth Five Year Plan needs to be refashioned to take care of the position as revealed by the Census data. One thing however, is clear and has been clear for several years ; all our plans of development will come to nought if we are not able to bring about an effective restraint on the growth of population. I need hardly stress the importance of family planning and the need to evolve a national consensus on this, so that all sections of the people irrespective of their ideology cooperate in this truly important national objective. The Sixth Plan provides a substantial outlay for the family planning programme. It has also been made clear that the constraint of resource will not be allowed to come in the way of an effective programme of family planning.

THE PLAN DOCUMENT ENVISAGES a substantial reduction in the percentage of people below the poverty line. In 1972-73, the percentage of people below the poverty line was 52 and by 1977-78 it had come down to 48. The Sixth Plan envisages a further decline of this percentage to 30. Even 30 per cent is a high figure since it means a large absolute number of people below the poverty line.

Too often we have seen that the benefits of development schemes flow to the relatively better-off sections to the neglect of the small and marginal farmers and the landless labourers. The Government will endeavour to check this tendency to ensure that the benefits flow to the most needy and deserving sections of the people.

We would, however, not be fair to ourselves and to the efforts made over the past three decades, if we do not recognise the tentativeness of these estimates, or if we do not give enough weightage to the fact that these figures do not take into account the considerable redistribution of consumption and the other benefits which has taken place through conscious Government policies and public expenditure. The estimates do not reflect, for instance, the fact that a number of services are being made available free—such as production and health facilities, nutrition, improved water supply and other public services. Also, the estimates do not reflect the general improvement which occurs with the building of roads, electrification and communications.

We have given the highest priority in the Plan to the reduction of poverty and over time to remove it altogether. I do not wish to underestimate the enormous nature of the task. However, our efforts in this direction should not be undermined by unwarranted pessimism.

THE 20-POINT PROGRAMME has been redefined and recast. The revised 20-point programme was announced by the Prime Minister on January 14, 1982. It focusses on some of the most important economic and social programmes included in the Sixth Plan and seeks to impart greater dynamism to these. While the thrust of the revised programme continues to be on providing better living conditions for the less privileged sections of the population, it also aims at all round improvement in productivity. In view of the urgent need to control the growth of population, the programme lays special emphasis on promoting family planning on a voluntary basis as a people's movement. The National Development Council at its meeting held on March 14, 1982 expressed its determination to implement effectively the revised programme which contains the core elements of the Sixth Plan.

Effective implementation of the plan is essential for achieving the employment goals that we have set for ourselves in the Sixth Plan.

Since an increase in productivity is essential both for achieving a satisfactory rate of growth and implementing effectively the various poverty alleviation programmes, the year 1982 has been declared as the year of 'productivity'. It is intended to give a push to production all along the line and ensure more efficient and optimum utilisation of the available resources to secure the best results. Action has already been taken to identify the policy and operational constraints which affect productivity and to fix targets for achieving higher levels of production and productivity.

I need hardly point out that a plan of the magnitude presented in the Sixth Plan document will require massive mobilisation of resources, both internal and external. Already considerable effort has been made both by the Centre and the States, but in view of the cost escalations since 1979-80 as well as the erosion in the surplus from current revenues at 1979-80 rates of taxes, it is no longer sufficient to mobilise additional resources in nominal terms of the same order as indicated in the Sixth Plan document. To meet the essential requirements of the Sixth Plan and fulfil the targets indicated in the revised 20-Point Programme, it will be necessary both for the Centre and the States to undertake a larger resource mobilisation effort. It is equally necessary that non-development expenditure is contained so that the benefits of additional resource mobilisation accrues to the Plan.

I need hardly stress the importance of family planning and the need to evolve a national concensus on this, so that all sections of the people irrespective of their ideology cooperate in this truly important national objective. The Sixth Plan provides a substantial outlay for the family planning programme.

WE ARE ALSO CONSCIOUS of the fact that control of inflation and the generation of stable price expectations are crucial for the successful implementation of the Plan. A series of measures have been taken to check the rise in prices and it is encouraging to note that 1981-82 witnessed a sharp decline in the rate of inflation. On a point to point basis, the wholesale prices index increased by only 2.1 per cent over the year as compared to 16.4 per cent in 1980-81. There is, however, no room for complacency in the matter. Inflationary pressures still persist in the economy. The investments contemplated under the plan would generate additional incomes and demand. It will, therefore, be extremely important to keep a close watch on the price situation and ensure efficient demand and supply management in order to maintain stable price conditions.

An important objective of the plan is the pursuit of self-reliance. This means that we have to minimise our dependence on the outside world for financing our development. In particular we have to ensure that our exports grow sufficiently to finance the growing import needs. It is clear that we cannot do so fully in the immediate future in view of the very sharp increase in the oil prices which have thrown an additional burden on our balance of payments. Our medium term objective must be to bring about a balance in our external payments and meanwhile mobilise external resources on the scale necessary for the achievement of the Plan objectives. This would require a vigorous programme of export promotion as well as import substitution in such vital areas as petroleum, steel, fertilisers, cement and vegetable oils. The investment and production targets for various sectors have been fixed keeping in view the balance of payment perspective.

While the thrust of the revised 20-point programme continues to be on providing better living conditions for tre less privileged sections of the population, it also aims at all round improvement in productivity.

As the structural adjustments to narrow the trade gap and achieve viability on external account can take place only over a period of time, the Government entered into an Extended Fund Facility arrangement with the IMF for SDR 5 billion to be provided as balance of payments support over a three year period November 1981 to November 1984. However, since the IMF credit would provide relief only for a limited period, steps are being taken to make the required adjustments as speedily as possible. In keeping with the medium-term strategy, the annual plan for 1982-83 lays particular stress on increasing the production of petroleum, fertilisers, cement, steel and edible oils so as to contain the growth of imports within manageable limits ; likewise it envisages further measures for increasing the growth of exports. The import and export policies for 1982-83 reflect the need to increase production and productivity and help strengthen the balance of payments position. Steps have also been taken to further encourage investment and remittances by Indians abroad.

Reduction of poverty and self-reliance are the main objectives of the Sixth Plan. It is to subserve these that the Plan proposes a certain strategy of development.

(Continued on page 8)

One of the important objectives of the Sixth Five Year Plan is a progressive reduction in the incidence of un-employment and poverty in the country. The phenomenon of unemployment cannot be delinked from that of poverty and hence employment policy cannot be isolated from the approach to the overall growth of the economy. Smt. Ramdulari Sinha, Union Minister of State for Industry, Steel and Mines, while inaugurating the National seminar on "Education For Self-employment" in New Delhi recently, discussed how self-employment could increase production and productivity. Excerpts of her speech are reproduced below :

Self-Employment Increases Productivity

Smt. Ramdulari Sinha

THE YEAR 1982 IS OF special significance to our country, as our Prime Minister has declared 1982 as the year of 'Productivity'. It should be our earnest endeavour to ensure that production and productivity increase substantially in every sphere of human activity. In this context, self-employment ventures could play a very useful role by contributing to increase in production and productivity. One of the important objectives of the Sixth Five Year Plan is a progressive reduction in the incidence of unemployment and poverty in the country. Reduction of unemployment and attainment of conditions of full employment have been the principal goals of our development plans. The phenomenon of unemployment cannot be de-linked from that of poverty and hence employment policy cannot be isolated from the approach to the overall growth of the economy. At the same time, employment opportunities and incomes of weaker sections of the population would have to grow at a fairly fast rate if the sheer lack of purchasing power in their hands is not to constrict the overall desired rate of growth of the economy. The problem is not merely one of generating more employment opportunities but also that of providing productive employment and efficient deployment of resources with a view to upgrading the productive capability of those who might get left out of the process of economic regeneration. Past trends in the distribution of work force as also the absolute size of the work force already in the rural sector indicate that even with a fairly high rate of annual growth, it is the rural sector which would be the mainstay of labour absorption for quite a few years to come. Yet another feature of the work force in the Indian economy has been the preponderance of self-employment. While formulating the programme for employment, whether for the unskilled workers or for the skilled and educated manpower, efforts, therefore, are to be concentrated on the possible avenues in the rural sector and also in the direction on self-employment.

Past trends in the distribution of work force as also the absolute size of the work force already in the rural sector indicate that even with a fairly high rate of annual growth it is the rural sector which would be the mainstay of labour absorption for quite a few years to come. Yet another feature of the work force in the Indian economy has been the preponderance of self-employment.

The speedy expansion and diversification of opportunities for productive employment is an important task for fulfilment and this has been taken note of by the Indian planners.

Government is fully aware of the unemployment situation in the country and has been taking all possible steps to generate more and more employment opportunities in the successive Five Year Plans. Recognising the fact that meaningful solution to the problem of poverty, unemployment and underemployment can be found only within the framework of a rapidly expanding economy, the Sixth Five Year Plan envisages an annual rate of growth of the economy of 5.2 per cent. The Plan also recognises that even this rate of growth will have to be supplemented by more direct means of reducing poverty, especially in the rural areas and therefore, envisages programmes of direct productive benefits to the poor involving transfer of assets, generation of wage employment through the National Rural Employment Programme, and the provision of social services through the Minimum Needs Programme and other programmes.

THE SPEEDY EXPANSION AND diversification of opportunities for productive employment is an important task for fulfilment and this has been taken note of by the Indian planners. It is expected that the increased tempo of planned investment and efforts to raise the productivity of capital on the one hand and the relevant emphasis placed on the small family norms on the other, would have a salutory effect on the unemployment situation.

Unfortunately, there is a tendency among youth in our country to run after jobs in the organised sector; these types of jobs being limited, most of them remain unemployed and continue to inflate the stock of unemployed. Such a tendency has to be arrested and there is an urgent need to apprise the youth of the scarcity of wage-paid or salaried jobs, and of the various facilities and incentives that Government would be granting them if they choose a career of self-employment. With a view to achieving this objective the Sixth Plan has proposed a New Deal for self-employed and has emphasised the need for determined efforts to promote self-employment for ensuring a progressive reduction in the incidence of poverty and unemployment.

The Plan had envisaged a disaggregated approach to promote self-employment. Under this approach, in each district, District Manpower Planning and Employment Generation Council was to be set up, and this was to be represented by people's representatives, concerned development departments, credit institutions, voluntary institutions and academic research and training institutions. You will be happy to know that District Councils have already been set up in 12 States and 6 Union Territories and others are either taking steps to set up such Councils or have decided to entrust this work to the existing bodies. The State of Madhya Pradesh has set up a Council on experimental basis. Based on the available assessment of the scope for economically viable self-employment projects, the Council in each district will, inter-alia, get prepared a portfolio of viable investment opportunities available for self-employment. A Scientific and Technical Entrepreneurship Development Board has also been set up to assist the unemployed scientific and technical personnel to take to a career of gainful self-employment.

The Sixth Plan has proposed a new deal for self-employed and has emphasised the need for determined efforts to promote self-employment for ensuring a progressive reduction in the incidence of poverty and under-employment.

A National Level Guidance Committee has been constituted to oversee the functioning of District Councils and to advise on employment planning issues.

ARRANGEMENTS ARE ALSO being made for providing a package of assistance such as supply of inputs, provision of credit training and marketing facilities to those who go in for self-employment. The self-employment promotion efforts already being made by the commercial banks, the District Industries Centres, Small Industries Development Organisations and various public sector corporations would also create a large number of self-employment opportunities. On the other hand, the National Scheme of Training Rural Youth for self-Employment will provide short-term training courses to the Rural Youth and give them incentives to set up their own ventures.

I am very happy to note that National Alliance of Young Entrepreneurs have been playing a leading role in formulation of programmes in the field of education for self-employment among students. Massive and wide-spread entrepreneurship ensures the induction in the economy of a large number of youth coming from such areas which have not been traditionally industry|trade-oriented. National Alliance of Young Entrepreneurs has been rendering yesman service in catalysing the process of industrial decentralisation by providing a National Forum for small entrepreneurs and successfully championing their cause. □

Achievements and prospects of Sixth Plan

(*Continued from page* 6)

IT IS NOT ENOUGH TO FORMULATE a plan; the more important task is to implement it. The Sixth Plan has stressed the need for effective implementation and made a number of suggestions for this purpose. Action is being taken along these lines. In particular, the monitoring arrangement have been strengthened and streamlined. The Planning Commission monitors the progress in respect of selected projects|schemes covering 20 sectors. It prepares every quarter a review of production performance against the targets and progress of implementation of projects costing Rs. 10 crores and above against time and cost schedules. These activities are supported by system of performance review meetings, which are taken by secretaries of the concerned ministries usually every quarter. The Planning Commission is represented at these meetings. The problems in production and implementation as well as slippages in the projects under construction and the nature of corrective measures required are discussed at these meetings.

Further, at the time of the formulation of the Annual Plan, the Planning Commission undertakes, in consultation with the Central Ministries, State Governments and others concerned, a critical review of the performance in the implementation of the Plan programmes, projects and schemes in the preceding year so that the Annual Plan is prepared on as realistic a basis as possible. A process of quarterly performance review meetings at the level of Member, Planning Commission and six monthly Review of Plan progress has also been initiated. Specific inter-sectoral aspects and critical problems of implementation along with suggestions for remedial measures and follow-up action are discussed in depth in the performance review meetings. The Member, Planning Commission in charge of the subject also takes meetings with the State Governments|Electricity Boards on the implementation of the power programme.

In the words of the Prime Minister, "the measure of a Plan is not intention but achievement, not allocation but benefit. We are determined to implement this plan with stead fastness of purpose". I have not the slightest doubt that in this task we shall havt the fullest cooperation of the House and the nation. □

Recession in India, causes and cure

Dr. S. K. Goyal
and Dr. S. S. Agrawal.

There are arguments and counter-arguments on the question of whether India is facing recession today. On the one hand the Union Finance Ministry has categorically stated that there is no recession. On the other hand, the industry is crying hoarse about the imaginery recession certain segments of the industry are facing. In this article, the authors have analysed the causes of the recession, if any, and have suggested cure for the same. They feel that by according top priority to the development of agriculture and the promotion of exports, the country can cope with the problem of recession.

RESERVE BANK OF INDIA (RBI), in its Annual Report for the year 1981-82, has denied that there exists a generalized demand recession in the country. To discard the opinion of majority of economists and industrialists, it has taken shelter under the growth rate of 4.5 per cent in G.N.P. in the year 1981-82. But, on the contrary, R.B.I. has also agreed that certain segments of the industry have been facing the slackness in demand and has termed it as the "phenomenon of adjustment" to a regime of less rapid increase in prices. Accordingly, the stocks in the industries have piled up due to anticipation of continuing inflation. This phenomenon is purely temporary and will not generate a recessionary spiral.

By expressing such opinion, R.B.I. seems to have talked to the tune of the government rather than acting independently. In a developing country like India "Recession can be defined as a situation where capacity utilization remains at a lower level not because of input constraints but because of the slackness in demand". It can also be emphasized that recession is always sectoral in nature. Even in the industrially advanced countries where recession has been recognized as very severe and widespread, all the industrial units have not been affected by the present tendency. One top executive of a company in nuclear industry in U.S.A. has said, "Unfortunately, no matter, how erratic and depressed the civil economy becomes, the business of war and distruction is brisk and ever-pressing. Thus, we keep very busy in our efforts to support the prevailing politic" (Quoted by D. R. Pandse, in his article 'Facing the Recession'—Economic Times dated October 7, 1982). Similarly, there may be certain industries in our country which have been able to contain this problem. For example, power generation industry in our country has been so planned that it may be able to escape this phenomenon for a long time to come.

Recession can be defined as a situation where capacity utilization remains at a lower level not because of input constraints but because of the slackness in demand. It is always sectoral in nature.

It is, therefore, unnecessary to argue whether or not there exists a recession or whether it is general or sectoral, what is more important is to find the ways and means to solve the problem facing the country today. Certainly, there are industries such as cotton textiles, soda ash, jute textiles, viscose, staple and polyster fibre, nylon filament, commercial vehicles, tractors, steel, aluminium, refrigerators, air-conditioners and many other engineering industries are facing the deep crisis of poverty amongst plenty which can be considered a sufficient condition for recession. It has partly been caused by slackness in demand and partly by over-production.

It is unnecessary to argue whether or not there exists a recession or whether it is general or sectoral, what is more important is to find the ways and means to solve the problem facing the country today.

THE PRESENT BRAND OF RECESSION has been attributed, by majority, to two factors namely, credit squeeze and the liberalised import policy of the government.

It is not our intention to argue, here that the policy of the credit squeeze as has been followed by our government is unwarranted. Undoubtedly, it is a very important anti-inflationary drug and has definitely helped us to contain inflation to a great extent. But, in a developing country like ours, the policy of general credit squeeze particularly when a country has declared the year 1982 as the year of productivity and the rise in production is necessary to speed up the pace of economic development becomes harmful as it generally leads to recession in certain industries. The industries producing commercial vehicles, tractors, agricultural pumps and diesel engines etc. have definitely been affected by the policy of credit squeeze.

India is a poor country and most of the people depend upon bank loans for the purchase of these goods. So the credit squeeze has affected the purchase of these items leading to the accumulation of stocks and ultimately the cutback in production and under-utilization of capacity. India is in the midway of development. So, the development of agriculture and strengthening of the transportation is the necessity of the day. It is, therefore, imperative that the credit policy should be so designed as not to affect the production of such industries. R.B.I.'s recent decision to liberalize credits and to appoint a committee to review the working of credit authorization scheme (announced by the new Governor on October 25, 1982) are steps in the right direction and it seems that our policy makers have ultimately recognized the problem.

LIBERAL IMPORT POLICY is another contributory factor for the present recessionary trend. Soda ash, polyster fibre, tubes and pipes, steel, aluminium and viscose fibre are the notable industries which have been knocked down by the liberal imports. Soda ash is the most striking example of this category. Under the present policy, soda ash can freely be imported under the O.G.L. and plagued with recession, unemployment and shortage of foreign exchange, some East European countries are so over-stocked with this commodity that they are in a position to dump it in India at dirt cheap prices. It has put the indigenous producers in hot waters. It is thus suggested that while framing the import policy, the long-run interest of the country in general and such industries in particular should be safeguarded. The present situation can be avoided by imposing anti-dumping legislation as is the practice in several European countries.

ON THE OTHER HAND, the industry should also recognise its duty towards the nation and adapt to the changed atmosphere. It should learn to live by its own comparative advantages and should strengthen its export base. In fact, during 1950s and 60s. India had followed the policy of import substitution. It brought into production variety of goods which the people were bound to buy. So, in the era of import substitution, the producers had enjoyed a protected and seller's market. But, the policy of import substitution has its own limitations. It reached at the peak level during mid-sixties which made the government to shift from the policy of import substitution to the policy of export promotion.

The present brand of recession has been attributed to two factors namely, credit squeeze and the liberalised import policy. Credit squeeze policy is a very important anti-inflationary drug and has definitely helped us to contain inflation to a great extent.

It is true that unlike several western developed countries like the U.K., West Germany, the Netherlands, France and Ireland etc. our export earnings constitute a very little proportion of our national income. It is, thus, doubtful whether we shall be able to follow the export led growth or not. But, it is definite that the present situation can effectively be faced, by exporting the extra stock of goods, but foreign markets are highly competitive and are buyer's markets. So the exports can only be promoted by developing a special skill. Export promotion measures employed by the Government can, of course, be of great help to the exporters in their task but ultimately, an adequate attention will have to be paid towards price competitiveness, quality, modern means of packaging, marketing competance, delivery schedule, information, communication and credibility gap.

It is imperative that the credit policy should be so designed as not to affect the producion of industries, producing commercial vehicles, tractors, agricultural pumps and diesel engines etc.

LAST BUT NOT THE LEAST, recession can be kept under control by the generation of new demand which can come from additional income. For this purpose, industrial production will have to be linked with the growth of the other sectors of the economy particularly the agriculture sector. "Generally one per cent increase in our G.N.P. requires a 1.3 per cent increase in industrial production. This will definitely set a ceiling to industry from demand side". (D. M. Pai Panandiker, 'Production without Sale', Hindustan Times dated 31st August, 1982). Therefore, 8 per cent rise in industrial production will require the G.N.P. to rise at the rate of 6.16 per cent and agriculture at the rate of 5.33 per cent. Our Sixth Five Year Plan has envisaged the industrial growth at the rate of 8 per cent per annum, G.N.P. at 5.2 per cent and agriculture growth at the rate of 4 per cent per annum. It is thus clear that growth rate targets have wrongly been fixed and if the industry is able to achieve the targetted growth rate, it is bound to lead to recessionary trend.

In the year 1981-82, our industrial production has increased at the rate of 9.8 per cent, on the other hand G.N.P. and agriculture production have increased at the rate of 4.5 per cent and 3 per cent respectively. This structural imbalance might be the major factor contributing for the prevailing trend of recession. This anomaly will, thus, have to be removed and the balance will have to be kept between the industrial and agriculture sector.

SO, AGRICULTURE HOLDS the field as the generation of new demand, ultimately, depends to a considerable extent, on the development of this sector. It is but natural that when income from agriculture sector rises, it increases the demand for industrial goods as the demand of most of the agricultural products is income inelastic. It is only because of this reason that the economies of the developed countries of today have slowly been transformed into the industrial economies, with the result, the share of industries and exports in their G.N.P. has gradually been increased and that of agriculture declined. Hence, top priority should be given to the development of agriculture and the promotion of exports. The process of transformation and transfer of labour force from agriculture to industrial sector will take its own course. It will also help the country to cope with the problem of recession, if any.

Pulses constitute an important source of protein in a poor country like India where meat, fish, eggs and milk which provide protein requirements are virtually beyond the reach of an average Indian. The retail prices of pulses which partially meet protein requirements of the average Indian are also out of reach as the prices are continuously showing an upward trend. In this article, the authors have suggested a multi-pronged strategy to put the country on the even keel in the production of pulses.

Pulses need multi pronged strategy

R. C. Bhatnagar and
T. R. Singh

NEXT TO CHINA, INDIA is the second largest producer of pulses in the world. These two countries, between themselves, produce about 60 per cent of the total world production. These pulses constitute an important source of protein in poor country like India, where meat, fish, eggs and milk, the other items providing protein requirements, are virtually beyond the reach of an average Indian. The majority of Indian population being vegetarian, those pulses are widely accepted as an important item of food in practically every part of the country.

Unfortunately, however, the retail prices of these pulses are continuously showing an upward trend and if this tendency continues unabated, even these pulses are likely to get beyond the reach of the common man. Deprivation from this important source of protein, which is an essential constituent of a balanced diet would mean a set-back to the health and efficiency of India's teeming millions as also the all important precious human capital.

It is one of the ironies of agricultural production in India that while the food crops and commercial crops are looking up with better results year after year, the pulses have shown a declining trend. Instead of high priority, they have been relegated to the position of a secondary crop.

IT IS ONE OF THE IRONIES of agricultural production in India that while the food crops and commercial crops are looking up with better results each new year, the pulses have shown a declining trend. Instead of being accorded a high priority, they have been relegated to the position of a secondary crop and the cultivators, by and large, have shown greater preference to the cultivation of wheat, rice, sugarcane and other commercial crops. The area under pulses is shrinking and the production has come down steeply during the last two years but the rate of population growth has maintained a steady pace increasing by about 10 million each year. The result is that per capita availability of pulses has come down from 69 gms. per day in 1960-61 to 30 gms. per day in 1979-80.

TABLE I

Year	Area ('000 Hectares)	Production ('000 Tonnes)	Per Capita, per Day Availability (Gms.)
1960-61	23,563	12,734	69 0
1979-80	21,750	8,370	30.11

According to experts, an intake of 60 gms. of pulses per day is necessary in a balanced diet to meet the protien requirements of a healthy body. The availability of more 30 gms. of pulses per day per person is therefore alarming and does not augur well for the health and efficiency of our population. This dismal position is bound to be reflected through our vast but precious human capital which is already in a none too happy position.

THE PRODUCTION SCENE HAS ITS IMPACT on the price situation too. The basic imbalance between the supply and demand of pulses has created an ideal backdrop for upward trend in prices, which have gone up by more than 5 times during the last thirty five years of independence. This upward movement of prices has further adversely affected the protein intake of a large proportion of our population, which is already subsisting below the poverty line. In this connection, it is strange to note that the price rise had had very little effect on the area under cultivation of pulses. The cultivator continues to be averse to bring more area under pulses; it has on the other hand come down. This may be partly due to the fact that the benefits of price rise have remained confined

In the new 20-point programme, the government have accorded a very high priority to the production of pulses.

to the trading community only and have failed to percolate down to the cultivator.

TABLE II

Crops	Production (In '000 Tonnes	
	1960-61	1979-80
Food Crops	69,592	1,00,480
Commercial Crops	32,202	3,766
Pulses	12,734	8,370

TABLE III

Crops	Area (In '000 Hectares)	
	1960-61	1979-80
Food Crops	92,018	1,02,160
Commercial Crops	25,448	28,058
Pulses	23,563	21,750

TABLE IV

Crops	Variation in Percentage/ Area as compared to 1961	Percentage Variation in Production as compared to 1961
Food Crops	+11	+43
Commercial Crops	+12	+18
Pulses	—8	—33

Source India-1981

It is probably in this background that in the New 20-point programme, described as agenda for the nation, the government has decided to accord a very high priority to the production of pulses in India. To ensure a high level of availability of pulses in India, efforts have to be made on war footing and situation redeemed to improve the quality of human capital in the country.

BEFORE EXAMINING THE VARIOUS SUGGESTIONS to boost the production of pulses in the country, it is necessary to highlight certain important facts pertaining to the production of pulses in India :

1. The production of pulses during the last two decades has remained more or less stagnant but has shown a rapid decline during the last two years.

2. Over 75 per cent of the area under pulses is dependent on monsoon for its irrigation requirements.

3. The production of pulses is mostly confined to Uttar Pradesh, Himachal Pradesh, Madhya Pradesh, Rajasthan and Maharashtra and there is considerable variation in the per hectare productivity of these states.

4. In India the yield of pulses per hectare, on an average, is only 500 kgs. and has not changed much over the last two decades.

5. Per hectare production of pulses in China is 1100 Kgs. It is precisely for this reason that though the area under cultivation of pulses in both the countries is the same, the production in China is double than that of India. Similarly U.S.A., on account of its high technology and scientific innovations is producing about 1600 Kgs. of pulses per hectare, which is about three times more than what we are producing in our country.

IN THE LIGHT OF THE FACTS stated above and to make this cheap protien source easily available to the poor in the country, a multi-pronged strategy should be adopted so that we put the country on the even keel in the production of pulses :

Firstly, it is necessary to extend the irrigation facilities to pulse-cultivating regions hitherto depending on monsoon. This dependence can only be at the cost of our own peril.

Secondly, extension agencies must be actively involved to encourage pulse cultivation in areas traditionally ignoring their production. However, if it is not possible to increase the area under pulses, yield per hectare be increased from the existing area. This would involve greater attention to the biology of the soil, better water management, new and better varieties of seeds with more fertilizer consumption.

To make this cheap protein source easily available to the poor, pronged strategy should be adopted so that we put the country on the even keel in the production of pulses.

Thirdly, Pulses should be grown in unconventional seasons and unconventional areas. As it is, Arhar has now become a Rabi crop although originally it used to be sown during Kharif months. Similarly, cultivators should be encouraged to grow pulses with other major crops; the process of inter-cropping should be encouraged.

Fourthly, The Syllabi of Agricultural Universities should be modernised. The production of pulses be assigned an important place and there should be a separate paper on pulses compulsory for all agricultural graduates.

Finally, it is essential that the cultivator gets a fair share of the prevailing prices. The establishment of 'Regulated Markets' will greatly help to reduce the influence of trading community and ensure reasonable returns for the cultivators. The government should bring more pulses under the policy of price-support and constantly review the support prices. ☐

Role of employer in industrial relations

Vidya Sagar Singh

The first principle of employment policy is consideration and respect for the human beings involved. This requires appreciation of their individuality, their differences in capacity and their needs. Training can increase the ability to manage labour, because it can give knowledge of many methods that can be employed.

AN ANALYTICAL VIEW OF the fundamental aims of management policy and some of its main instruments can help to make clear the nature of the contribution the employer makes to industrial peace. The function of management in any business is two-fold; firstly to take economic decisions on what to produce and in what quantities, with the aim of maximising the profits of the business, and secondly to administer the economic resources of the firm with the purpose of finding the combination of the factors of production, men, machines, and materials, which will produce most efficiently, that is, at the least cost per unit.

The single-minded pusuit of efficiency may, however, lead to short-sighted policies in regard to labour. Profits may be increased in the short-run by making the labour work faster or for a lower reward, but this policy to be bought only at the cost of inefficiency in the long run due to impoverishment of labour and embittered industrial relations. Efficiency in the long run cannot be achieved by any means which rely on the exploitation of labour. A happy, satisfied, willing labour is always more efficient than exploited labour.

The initiative in developing good relations must come from the employer. Most firms now employ a personnel or labour manager. His primary responsibility is, firstly, the well-being and efficiency of the labour force, and, secondly, to see that in the search for reduced costs the management does not unwittingly take steps which sacrifice the well-being of labour to immediate commercial gain. Modern management policy, therefore, no longer regards the mangement of labour as a matter of secondary importance, but one which has to be handled by a specialist trained in methods of managing labour whose function is to advise and guide the employer on all matters relating to labour, so that the search for efficiency is not made at the expense of labour.

CONSIDERATION AND RESPECT for the human beings involved is the first and most important fundamental of employment policy. This requires appreciation of their individuality, of their differences in capacity and in needs, and an understanding of the workers' position and of his difficulties and fears.

The second fundamental is that the employer's aim should be to achieve full economic cooperation through the development of common interests. This makes the worker more truely a partner and reduces the need for arbitrarily imposed discipline, because it will bring about self-discipline in pursuit of a common aim.

The third fundamental is that some means must be found by which the workers can share in the economic prosperity of the firm.

The personnel manager should take responsibility for all aspects of the business which affect labour, subject only to the overriding authority of the managing director. He should be responsible for the recruitment, selection and training of labour, for conditions of work and welfare facilities, for wages and methods of remuneration, for the safety and health of workers, for the elimination of grievances, and generally for maintaining the relationship between the worker and the firm on a satisfactory basis. He serves as a channel of communication between the management and the workers.

Efficiency in the long run cannot be achieved by any such means which rely on the exploitation of labour. Happy, satisfied and willing labour is more efficient than the exploited labour.

One of the principle purposes must be to build up a permanent staff of workers, in the absence of which all efforts to establish good personal relations and economic cooperation are bound to fail. A stable labour force is a pre-requisite of good relationships. Stable employment requires two things that men should be satisfied with their work so that they will not want to leave it to take up job elsewhere, and that the economic demand for their labour should not change so suddenly that their services are no longer required by the firm. Measures should be designed to ensure that the infinite variety of human qualities is properly matched to the requirements of the very large range of different types of work in the factory, regarding both the job and its social environment. The careful selection and recruitment of workers will ensure that the right type of workers for the job will be selected. Systematic training will help workers to do the jobs well and will reveal more about their abilities. Attention to complaints and grievances, wages and promotions is required if adjustment is to be maintained between the wage and responsibility, skill and training required for the job. Unless this is done, promotion will not bring with it an orderly progress up the wages scale.

The ultimate sanction of dismissal is something to which management should never resort except in cases of gross misconduct. It is an admission that the firm has failed to select the right man or failed to make the necessary adjustments. A worker, once engaged, would be entitled to the assurance that if he does his work to the best of his ability, his job is secure so far it is possible to make it so.

All the variations in workers income must take the form of addition to the minimum agreed upon. The worker is so dependent on his wages which just meet his physical needs, that security of income is to him of first importance.

THE IMPORTANCE OF GOOD PERSONNEL management as part of the contribution of the employer to industrial peace cannot be overrated. Training can increase the ability to manage labour because it can give knowledge of the many methods that can be employed. It can also help towards understanding the view-point of the worker and why and how his grievances arise, and in this way it will contribute to increase the effectiveness of management policies. Next to the training of personnel managers comes the training of foreman in the management of labour because the foreman is the immediate point of contact between the worker and the management and is the channel through which the worker receives orders, obtains information and must first voice his discontents. They should have the capacity for sympathetic understanding of the men under them and have the ability to inspire respect and obtain cooperation from them. Training can greatly increase their effectiveness and help them to cooperate in carrying out personnel policies.

These methods of management can do much to mitigate the evils of industrial work, to bring security and contentment to the workers, and to make them feel that the firm cares about them as individuals. But these methods cannot by themselves create a spontenous interest in work. No enterprise can possibly be efficient that fails to enlist the interest of the workers and to secure their spontaneous and voluntary cooperation in pursuit of something they believe to be worth doing. The main way in which this aim can be pusued is through the development within the common interests of the workers and employers. In this connection, it can be said that whenever the aims of an informal group of workers can brought into line with that of the employer by the development of a common purpose, the need for enforced discipline will tend to disappear. To enlist the support of each informal group, thus bringing about cooperation within the groups of workers is therefore an important task for the management. Again, when common aims are developed, it becomes possible to delegate authority to many individuals for different parts of the organization, thus achieving a measure of self-government, thereby increasing the status of workers. By developing common interests in the worker, the feeling of want of satisfaction in their work can be offset.

Works council is the mechanism for joint discussion on matters of common interest. A work's council should essentially confine itself to matters of consultation and should not be used for bargaining. Consultation implies that there is already agreement on the desirability of an objective and that consultation takes place on the best method of attaining it, but bargaining implies no common aim. Again, to establish compulsory works councils or to give them statutory powers, as has been attempted in some countries but is likely to defeat its own ends. Men can be compelled by law to meet at stated intervals, but they cannot be compelled to agree. Although representatives of the management on the works council can be appointed, yet the representatives of the manual workers are best elected freely in their capacity as individuals without the management or a trade union coming into the picture. Because a works council is essentially a consultative organisation it can only exist and work by agreement, by the voluntary goodwill of both employers and workers. In all the work of the council the principle followed should be that of delegating to the workers, as far as possible, a share in the control of all maters affecting labour. In this way a considerable degree of self-government may be achieved.

FOR THE SUCCESS OF THESE MEASURES, everyone on the staff should have information made available to them on all aspects of the business, and the wider the information and the greater the willingness to discuss it, the more effective will cooperation become. The results of discussions on the work council should be made widely known and the reasons for them explained. The foreman is probably the best person to communicate these matters to the workmen under him. The method of holding regular meetings for discusssion of departmental matters between foreman, works council representative and workers can help to interpret remote and difficult problems of business into their immediate meaning for the workers. The most lasting contribution which the employer can make to social welfare and to industrial peace is through the education of the workers. He employs the method and problems of industrial management. The solution of the problem of industrial discontent lies in the final analysis in increasing the content of democracy in industry, and, without education, real democracy in industry is no more possible than it is in Society.

Sharing the proceeds of the business is the third fundamental principle of employment policy. Unless steps are taken to develop the common interests of the workers and employer, any scheme for sharing the proceeds is likely to be relatively unsuccessful. Monetary rewards are no substitute for lack of status or for want of interest in work. The two must go hand in hand, and the employer should realise that no scheme for sharing the proceeds of a business can

(*Continued on page* 18)

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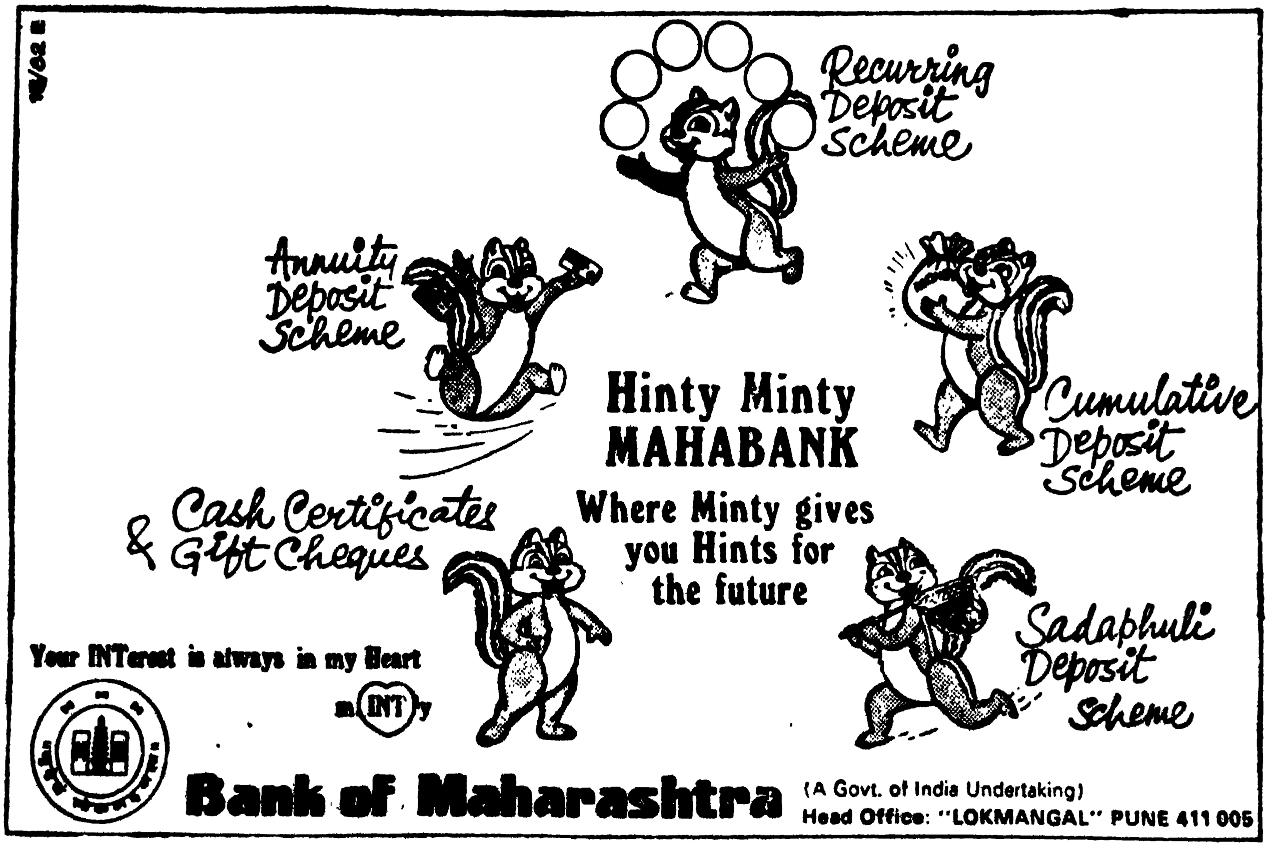

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Training of the physically handicapped

Kul Bhushan Tuteja

Education and training are essential for the handicapped persons for helping them to lead a life full of selfconfidence. The Uttar Pradesh Government is trying to help the handicapped persons with scholarships and other facilities. Certain percentage of seats are reserved for them in Roorki, Rohilkhand, Meerut and Kumaun Universities.

THE PRESENT STUDY CONFINES itself to the description of facilities provided to the physically handicapped.

1. **Scholarship and Stipend.**—The Department of Social Welfare, Government of U.P. has undertaken the following schemes of scholarship and stipend for the physically handicapped.

(a) **Stipend to the Blind, Deaf and Dump Students studying in voluntary institutions.**—Merit and poverty are the chief consideration for the award of this stipend. For the payment of stipend progress of the student during the session is a must. The amount of the stipend varies from Rs. 10 to Rs. 20 per month. To be eligible, for the stipend the income of parents/guardian of the candidate should not be more than Rs. 500 per month.

(b) **Scholarship to the physically handicapped persons**—Presently this schene covers students upto Junior High School level as well as those professional courses for which no educational qualification is prescribed for getting admission. Above the Junior High School level scholarships are financed by the Central Government. This scholarship is awarded by the U. P. Directorate of Harijan and Social Welfare.

The present amount of scholarship is Rs. 15 p.m. for class I to class V—students and Rs. 20 p.m. for class VI to Class VIII students. (iii) Professional courses for which no educational qualification is prescribed for getting admission the scholarship is Rs. 30 per month.

The eligibility criteria for award of scholarship is as follows :—

> The candidate should be a citizen of India and a resident of U.P. ; in the age group of 6 to 40 years ; he should not be getting any sort of aid from Central or State Government ; his parents'/guardian's income should be upto Rs. 500 per month.

(c) **Scholarship to the Wards of Physically Handicapped parents/Guardian.**—In order to assist the wards of physically handicapped persons, to get proper academic, professional and vocational training the amount of scholarship varies from Rs. 10 to Rs. 50.

These courses for which scholarship is available, are apprenticeship courses (such as photography, drawing, painting and other fine arts), music courses and naturopathy ; technical courses and professional courses of certificate or diploma level (such as carpentry, tailoring etc.) Scholarships are also available to school, college and university students and also to students of MBBS and engineering.

It is provided that the ward of handicapped parents/guardian applying for this scholarship should be a citizen of India and a resident of U.P. ; in the age of 6 to 25 years ; should not be availing any sort of aid or assistance from any other sources. Income of his|her parents|guardian should not exceed Rs. 500 per month from all sources.

2. **Grant-in-aid.**—The Department of Social Welfare Government of U.P. gives 20 per cent grant-in-aid to the Training College for Teachers of Deal, Lucknow for conducting Training courses.

> **It is important that the education of the handicapped should be integrated with the normal students. The handicapped are also part of the society and not out of it. The able bodied students should be able to accept them and develop an attitude of affection towards the less fortunate persons.**

3. **Integrated Education.**—In the year 1981 it was decided by the Education Department and the Directorate of Education U.P. to start Integrated Education Scheme in U.P.

In the first phase it was decided to initiate this scheme for deaf and dumb and blind in normal schools in Allahabad, Meerut, Jhansi, Kanpur and Agra, and for orthopaedically handicapped in normal schools of Allahabad and Meerut.

The main aim of this scheme is to place handicapped students in a normal school with able-bodied students so that they may adjust themselves with them on the one hand and on the other had able bodied students may develop an attitude of acceptance and a feeling of affection for the handicapped.

The specific objectives of this Scheme are as follows :—

> Proper adjustment of handicapped children with society. Creating a feeling of self respect among handicapped children and dispelling the anxiety emanating from the feeling of inferiority complex born out of their handicap. To provide a suitable environment for total development of physically handicapped children. To create a feeling of self-dependence among physically handicapped children.

Three months' training course for various categories of teachers have been planned for twelve teachers under this scheme. These teachers would get Rs. 200 per month during the training period in addition to their salary and Rs. 100 per month as incentive for taking classes of handicapped students along with normal (able-bodied) students.

It has also been planned to establish a special cell in the Directorate of Education, U.P. for conducting this scheme smoothly. The Deputy Director of Education would be its head for implementing this scheme. The amount of Rs. 33.25 lakhs is likely to be spent on this scheme during the period of sixth Five Year Plan.

4. **Concession and Relaxation.**—Besides above programmes the following concessions and relaxations are being given to the physically handicapped persons :—

> All the Universities in U.P. are providing "Amaunesis" facilities to the blind students. In Kanpur University half an hour extra time is being given during the examination. The percentage of seats reserved for the physically handicapped students in various universities of U.P. are 1 per cent in Roorkee, 2 per cent in Rohilkhand 5 per cent in Meerut and 3 per cent in Kumaun.

One per cent of the total seats are reserved for the orthopaedically handicapped students in each Medical College of U.P. since the session 1982-83.

5. **Motivation and Propagation Work.**—The Department of Education has been directed by the U.P. Government to issue instructions to schools for motivating physically handicapped persons to get admitted in the aforesaid institutions where "Integrated Education Scheme" is being carried on.

The propagation work regarding the Education of physically handicapped has also been undertaken by this Department.

In conclusion it can be said that education helps the handicapped to stand on their own feet. It gives them self confidence and makes them useful members of society. ☐

Role of employer in industrial relations

(*Continued from page* 14)

act as a direct incentive to fast work. Thus, any system of remuneration most likely to give a satisfactory basis for good industrial relations must contain two sides. Firstly an arrangement by which a direct reward is given for hard work, and, secondly, some means by which the wages of the worker vary with the prosperity of the firm.

Security of income: One thing should be clear, however, that whatever methods of sharing the proceeds of a business may be adopted, it is important that it should not involve any risk to the worker's income. The worker is so dependent on his wages, which just meet his physical needs, that security of income is to him of first importance. Therefore, all variation in his income must take the form of a variable addition to the minimum time rate agreed upon.

Several alternative methods are possible by which additions may be made to a fixed minimum wage in order to give the workman a share of the profits. They are : (a) formal profit sharing scheme, by which a fixed percentage of the net profits as defined by agreement is paid as an annual bonus; (b) method of copartnership, by which the workers are annually given a share of the profit in the form of ordinary shares in the business; (c) wages to be adjusted annually up or down, subject to an agreed minimum, according to the extent to which profits exceed or fall short of a certain minimum standard.

It is certain that none of these methods can succeed alone, without the other measures mentioned before, in achieving full economic cooperation. There is urgent need that employers should experiment and and in consultation with the trade Unions attempt to find means which will enable joint consultation to bear the full fruit of economic cooperation.

Welding glue

The polymer glue developed at the Institute of High-Molecular Compound Chemistry of the Ukrainian SSR Academy of Sciences in the USSR has replaced electric welding in the deep coal mines of Donbas. It was very much to the point in the places where work with open flame was very complicated or banned because of security considerations.

Such cold hardening glue was applied with success for repairing underground air-ducts, joining and sealing pipelines. It can also be used to protect subsoil equipment from errosion since it is waterproof and can stand big temperature drops. The new material is already used in 20 mines of Donbas.

(*Soviet Features*)

Houses on 30—metre piles

Nine-storey houses on drill built-in-place piles, which can stand strong earthquakes, are being built for the first time in Dushanble, in the Tajik Republic of the Soviet Union. The new method guarantees safety of dwellings in areas prone to earthquakes of magnitude. These piles go to a depth of up to 30 metres and, resting on the graval layer, impart the needed strength to structures.

(***APN***)

Gujarat poised for prosperous era

B. N. Tripathi.

The per capita income of the State is higher than the National per capita income. Over 82.68 per cent of the towns and villages covering 96 per cent of the population (as on 31-3-1981) are provided direct bus services by the State Road Transport Corporation. Literacy in Gujarat is 43.8 per cent.

GUJARAT STATE CAME INTO being on 1st May, 1960. Since then, progress has been registered in many sectors of economy. The State has an area of 1,95,984 sq. kms.—5.97 per cent of that of the Indian Union. Its population according to the 1981 Census is 3.40 crores, forming 4.97 per cent of the country's population and is predominantly rural—68.92 per cent. Agriculture provides employment to 60.58 per cent of the working population while a further 39.42 per cent are engaged in household and other occupations. Eleven cities, Ahmedabad, Surat, Vadodara, Rajkot, Bhavnagar, Jamnagar, Nadiad, Junagadh, Porbandar, Bharuch and Navsari have a population of more than one lakh each.

The third Five Year Plan 1961—66 was the first determined efforts to initiate development in different regions of the State in a systematic manner. The State plan expenditure for the period 1961—80 aggregated to Rs. 2831.34 crores.

THE STATE'S DOMESTIC PRODUCT at current prices, has grown from about Rs. 2189 crores in 1970-71 to Rs. 5437 crores in 1979-80. In per capita terms, the SDP at current prices has registered a rise from Rs. 829 in 1970-71 to Rs. 1658 in 1979-80 and in terms of constant (1970-71) prices, from Rs. 829 to Rs. 848 between 1970-71 and 1979-80. The per capita income of the State is higher than the National per capita income.

AGRICULTURAL PRODUCTION in the State has recorded a substantial increase. Average annual production of Food-grains was 44.76 lakh tonnes in 1980-81, production of oil seeds and cotton has gone up to 19.93 lakh tonnes and 17.85 lakh bales respectively.

Inspite of fluctuations from year to year, the compound rate of growth of foodgrains production for the entire span of 29 years has been 5.2 per cent. The corresponding rates in the case of oil seeds and cotton are 5.4 per cent and 3.7 per cent respectively.

The consumption of fertilizers which was mere 0.40 lakh tonnes in 1961-62 rose to 3.57 lakh tonnes in 1980-81 and the area under high yielding varieties increased from 2.34 lakh hectares in 1968-69 to 21.71 lakh hectares in 1980-81.

With a view to augmenting the supplies of edible oils and saving foreign exchange, the Government undertook a major campaign for groundnut production on an intensive scale in groundnut growing areas in Gujarat. The results are encouraging and the yield per hectare of summer groundnut is estimated to be double than the normal rainfed yield. The total groundnut production of 1981-82 was at 23.3 lakh tonnes.

WITH A LIVESTOCK POPULATION of over 144 lakhs and reputed breeds of cows and buffaloes, there is a large potential for the development of animal husbandry and dairying in the State. A net work of dairies capable of handling over 17.51 lakh litres of milk a day have come into existence. The total milk production during 1970-71 was estimated to be 18.06 lakh tonnes. This has gone upto 23 lakh tonnes during 1980-81.

FISH PRODUCTION has increased from 0.8 lakh tonnes in 1960-61 to about 2.36 lakh tonnes in 1980-81. A large number of mechanised boats has been added to the fleet raising it from 413 at the end of 1960-61 to 3859 at the end of 1980-81.

The pace of industrialisation has been impressive. The number of working factories has grown from 3649 in 1960 to 10,611 in 1979-80. In the same period the number of employed has risen from 3.30 lakhs to 6.39 lakhs.

THE IRRIGATION POTENTIAL which was 9.72 lakh hectares in 1960-61 has gone up to 27.01 lakh hectares in 1979-80. Similarly, the utilisation has also increased from 7.45 lakh hectares in 1960-61 to 19.77 lakh hectares at the end of 1979-80.

INSTALLED CAPACITY FOR POWER generation was 142 MW in 1951. By 1979-80 there has been a seventeen fold increase to 2384 MW. As against 117 localities electrified by 1950-51 the benefits of electrification have been extended 12515 places at the end of 1980-81. Nearly 2.31 lakh pump-sets have been energised by 1980-81.

THE PACE OF INDUSTRIALISATION in the State has been impressive. The number of working factories has grown from 3649 in 1960 to 10,611 in 1979-80. The terms of number employed, the rise over the same period has been from 3.30 lakhs to 6.39 lakhs. Value added by manufacture recorded

Tribal sub-plan for Koragas

Koragas are quiet, inoffensive, truthful and god-fearing tribals. They mostly live in Dakshina Kannada District of Karnataka. Efforts are being made to improve their economic and social conditions.

Vasudev Bhat

PIJINA IS SHORT STATURED and dark. So is his brother Daddu. Sitting beneath a thatched shed that has nothing on the sides, Pijina and Daddu are engaged in the Traditional Craft of basket making from dried creepers.

Their workspot is located in a dense forest, 20 KM away from Karkala in South Kanara. A small rivulet flows close-by known as Kadu-Hole (Forest Stream) Pijina and his fellow brethern resided there once. Today, all except these two, have shifted to a better location where the Government have provided them with Janatha Houses. These two don't want to leave because their deity, Bhoota's, abode is there. And also they get there dried creepers, the main raw material for basket making.

The two brothers belong to Koraga tribes identified as primitive tribes, under Tribal Sub-Plan by Government of India. They are known for their God fearing nature and truthfulness.

KORAGES ARE A VERY QUIET and inoffensive and, perhaps, the poorest among the Scheduled tribes. They are short and middle sized. The men are seldom taller than five feet six inches ; very dark in complexion like other Indian aborogines, they are thick lipped with broad and flat noses, high cheek bones and sloping foreheads. They have been worshippers of spirit.

They live on the outskirts of the villages in exclusive hamlets. They do not dwell in houses of mud or clay but in huts made of leaves ; thatched huts with only one small entrance, similar to Todas in Nilgiri Hills. Koraga males wrap a piece of cloth around their loins. Females cover their waist with leaves woven together. Their total population is estimated to be little over 10,000. They mostly live in Dakshina Kannada District of Karnataka. They are all landless labourers. They also do basket weaving from dried creepers. Certain groups from among them are engaged in scavenging and sweeping in urban areas. They have been covered under the Integrated Tribal Development Programme to improve their economic and social condition.

Lot of efforts have been put-in, in this part of the West Coast in the last 50 years. Pioneering work in the field was initiated by a few individuals. Foremost among such individuals was the late Kudumal Ranga Rao who was a devoted worker and sacrificed much for the cause. Sometime, in 1897 he is said to have bought some plots of land in a few places at Mangalore and Udipi and constructed schools for the children of the neglected sections.

MAHATMA GANDHI, WHO VISITED MANGALORE in 1927, is understood to have paid glowing tributes to Ranga Rao for his constructive work in the field of Tribal Welfare. The late Karnad Sadashiva Rao followed in his footsteps and rendered Yeoman service in this field. Since then, a number of individuals and institutions have worked in their own humble way.

A programme of establishing agricultural colonies for SC and ST in the State was implemented under centrally sponsored Scheme during Second Five Year Plan period. 5 to 10 acres of cultivable land were granted to each of the families settled in these colonies ; in addition to a subsidy of Rs. 400 for construction of houses and Rs. 300 for purchase of bullocks. Each colony was also provided with a Community Centre-cum-School building. Provision of drinking water facilities, approach roads were also made. This scheme has been now taken-up vigorously under the I.T.D. Programme.

Agricultural colonies have been set-up at Indabettu, Naravi and Neriya in Belthangady Taluk, Hirebetta and Putturu in Udipi Taluk and Idu and Mala in Karkal Taluk. Each colony also have a community centre and School.

Koragas skill in basket making were mostly exploited earlier by the forest contractors and local merchants. They were advancing money at the rate of 25 paise to 30 paise per cane basket and were selling the same at 75 paise to a Rupee ; depriving the basket makers, the substantial margin. In order to overcome this Industrial Co-operative Societies, LAMPS (Large scale Agriculture Multi-purpose Co-operative Societies) were organised in Coondapur, Karkal, Belthangadys and Sulia Taluks. Today, along with basket making they engage in making grassmats, bee-keeping, collection of medicinal plants and herbs.

WOMEN WELFARE CENTRES, NURSERY Schools, tailoring units, needle work and the like Welfare Schemes have been taken-up vigorously, under I.T.D.P. Bhajana and Social functions also conducted occasionally. Supply of plough bullocks, facilities for land reclamation, housing facilities, facility for sheep rearing and poultry farming, drinking water facilities, medical facilities have been now taken-up vigorously under I.T.D.P.

Although the Tribal Sub-Plan was started in the State during the Fifth Plan period, the scheme could not be fully implemented and tribals were often not aware of the scheme. Their economic standard has not changed by the introduction of the Tribal Sub-Plan to the extent expected.

During the Fifth Five Year Plan tribal sub-plan was started. The tribals have not benefited from the sub-plan to the extent expected, because very often they are not aware of the schemes chalked out for their benefit.

In order that the programme has greater dynamism and relevance, a different approach and strategy is being adopted during the Sixth Five Year Plan 1980—85 for the preparation of the Tribal sub-Plan. The objectives are :

(i) To improve the quality of life of the tribal communities.

(ii) To increase the income of tribal communities in the immediate future and prepare them for self reliance in the context, so that they can become equal partners in the new productive process and development tasks.

(iii) Elimination of exploitation.

(iv) Building the inner strength of the tribals and improving their organisational capabilities.

(v) Emphasis on full employment, education and Health Services

(vi) To identify the skills of the tribals and improve their traditional crafts

UNDER AGRICULTURE SECTORAL PROGRAMME, assistance is being given by supplying pairs of plough bullocks @ Rs. 2,000 per pair in each case. Supply of inputs like seeds of HYV (hybrid varieties free of cost, at a cost not exceeding Rs. 500 per acre per family), agricultural implements, plant protection equipments, storage bins ; demonstration of improved agricultural methods ; sinking of community irrigation wells conducting of bench terracing, contom bunding, graded bunding and other soil-conservation practices have been taken up. Construction of farm ponds for irrigation purpose, encouragement to take-up horticulture crops, raising of model fruit orchards have been also introduced.

Under animal husbandary schemes, supply of milch cows, establishment of poultry units, piggery units, goat units, implementation of inland and marine fisheries have been taken-up. Training in fish culture, supply of fishery requisites, assisting tribal societies to take-up fisheries, training for marine fisheries have been initiated.

Under co-operation departmental schemes energising LAMP societies by giving managerial subsidies and share capital assistance to tribals are taken-up. For marketing the handicrafts of tribals purchase points have been opened.

THE SPIRIT OF THE SUB-PLAN is yet to percolate down to grassroots. Inaccessible interior villages and scattered habitation of the tribals is one of the causes of the slow progress. It is a challenging job to draw the tribals out of their shell through better communication and employment opportunities.

In Sacherapet (Karkal) 17 families of Koragas are rehabilitated in 4 rows of Janatha Houses. Apart from the house each family got coconut seedling, Banana, pappayya saplings and few Eucalyptus plants. Akku was sitting with her child in the open space in front of her house engaged in rope making from Coconut fibre. Her husband, a Coolie, works on some farm while she sits at Home and makes coir rope and sells it to LAMPS. Akku and her family and other member of the Colony appeared to be comparatively better placed in life and one would naturally be tempted to look with admiration at ITDP for having achieved a remarkable progress within 3 years of its introduction.

Fortyone colonies of the tribals are being taken-up for Electrification under Rural Electrification Schemes. Raising a plantation of Tassar Silk Cultivation giving a filip to Bee-keeping, carpentry, manufacture of model Bee-hives boxes, assistance in cans and bamboo works or ornamental pieces, establishment of Eri-silk sub-centres, Tassar-grainage farms, Mulberry nurseries, were the other schemes envisaged under Integrated Tribal Development Programme. Providing means of communication is very essential for the implementation of the programme. Development can't be brought without roads linking pockets of Tribal habitations with the main stream of social and commercial activity centres.

Inaccessible interior villages and scattered habitation of the tribals is one of the causes of the slow pace of development schemes.

There has been large scale encroachment of the lands assigned to the tribals. Action is being taken to evict encroachers wherever such cases are detected. Some of the tribal lands also have passed into the hands of non-tribals (including outsiders).

The programme for release of bonded labourers and their rehabilitation is being reviewed from time to time with vigour so that the bonded labour system completely disappears from the tribal areas.

Very few tribals are making use of the co-operative movement for credit and marketing purposes. Since the collection of Minor Forest Produce is the major activity of the tribals in the Integrated Tribal Development Project, it is necessary to have a viable system both for collection and for marketing of the produce by the tribals without the interference of middlemen. In order to activise such a programme, 'LAMP' Societies have been established.

(Continued on page 26)

Haryana came into existence on November 1, 1966. Since then social service sector has shown a marked improvement. By the end of 1979-80 71.9 per cent children in the age group of 6-11 were enrolled for primary education. The number of hospital beds per lakh of population was 71. Out of a total number of 6731 villages 1316 had been provided with clean drinking water. 6110 villages were connected by roads.

Planning in Haryana

D. P. Ghanghas*

WITH 78 PER CENT OF POPULATION living in rural area in 1981, the State economy is dominated by agriculture. The development strategy in agricultural sector has been to maintain and increase irrigation. Increased use of high yielding variety seeds, chemical fertilizers, availability of credit and increased exploitation of sub-soil water also formed the part of the strategy adopted under various plans in Haryana. Animal husbandry and dairy development have also been given due attention. During 1969-70 to 1974-75 371000 hectares of additional sown area was brought under irrigation. But still 47.5 per cent of the sown area is totally at the mercy of the monsoon. This is a direct result of delay in the implementation of the projects.

Consumption of chemical fertilizers went up 16 times from a level of 13347 tonnes in 1966-67 to 215444 tonnes in 1979-80. It has further risen to 64.6 Kgs. per hectare in 1980-81. By the year 1979-80, 2112000 hectares of cropped area was brought under HYY seeds. The number of tubewells and pumpsets increased by 969.4 per cent during 1966—80. Number of tractors rose from a figure of 134712 in 1973 to 359255 in 1980. Loans advanced by cooperative societies reached a level of Rs. 122.70 crores in 1979-80 from a meagre sum of Rs. 10.31 crores in 1967-68.

With the modernisation of agriculture in terms of extended irrigation facilities and new package programme, Haryana has been able to increase the foodgrains production from a level of 25.92 lakh tonnes in 1966-67 to 53.4 lakh tonnes in 1977-78. All villages were electrified by the end of the year 1970.

THE STRATEGY IN INDUSTRIAL sector has been to develop industrial areas/estates and strengthening of the activities of Industrial Development Corporation and State Financial Corporation. In fifth five year plan, particular emphasis was laid on the development of village and small scale industries. In the middle of the year 1977-78, a new scheme of self-employment was launched by the state government. The scheme provided for a package of assistance in the form of institutional finance and subsidised rates of interest, seed money assistance, supply of raw material, marketing and technical know-how to rural youth for establishing tiny units in rural areas. In 1978-79 and 1979-80 respectively 697 and 1688 units were established against the targets of 330 and 360 units. But in terms of contribution to industrial output this programme has not been so successful. The incidence of sickness is higher in rural units than other industries and moreover, a sizeable number of these tiny units are ghost units.

The percentage of population below poverty line has dropped to 37.79 per cent in rural and 31.67 per cent in urban areas.

Major share of state income is contributed by the primary sector. Thus we can conclude that even after fifteen years of planning, stability in state income is synonymous with the stability in agriculture sector.

Investment in the major and medium irrigation schemes has benefited mainly the rich farmers. Haryana is best suited for agro-based units. To increase the agricultural production, emphasis should be laid on minor-irrigation.

This is partially due to the failure of development strategy in industrial sector. Industrial activity is going on only in 11.5 per cent of the total sheds|plots developed by various agencies in Haryana.

In Haryana it has been the strategy of the planners to provide employment opportunities commensurate with the growth rate envisaged. In fourth five-year plan, adoption of labour intensive techniques in small scale industries and Cooperation in cottage industries was thought to be a wise way of increasing employment opportunities. Planners of the fifth five year plan wanted to maximise employment not only by expanding programmes of social services like education, health, nutrition, drinking water supply, housing etc. but also by adopting labour intensive schemes in the field of minor irrigation, soil conservation, dairying and animal husbandry, forestry, fisheries, warehousing and small scale industries.

Although state income increased at a compound growth rate of 4.7 per cent per annum during 1974—78 but it did not have any favourable impact on the problem of unemployment i.e. unemployment increased from a level of 1.5 lakhs in 1972-73 to 1.67 lakhs in September, 1977.

REDUCTION IN INEQUALITY :—The problem of unemployment, poverty and inequality are interwoven problems. Removal of poverty and reduction in inequality are essential to improve the standard of living of the people. In Haryana, these objectives were sought to be attained through diversification of economic activities, institutional changes, creation of employment opportunities and provision of minimum basic needs. But a close look on the strategy adopted in various plans shows that it had a bias in favour of giganticism. Investment in major and medium irrigation schemes benefits mainly the rich farmers. During fourth and fifth five year plans in Haryana, Rs. 1318.61 lakhs were allotted for minor irrigation whereas Rs. 17312.0 lakhs were kept for major and medium irrigation. Although all villages have been electrified but the poor farmers have not benefitted from it because they cannot afford to instal tubewells and thrashers.

Electrification of villages has helped those who can instal tubewells and thrashers.

A study of the strategy adopted shows that the plans in Haryana did not attack the causes of poverty directly. Small Farmers Development Agency (S.F.D.A.) has not been successful in providing work to farmers during slack season. Efforts made to fill this gap by developing cottage industries through cooperatives did not yield any significant result. Small scale sector, which could lessen the burden of agriculture recorded a lower growth rate as compared to large scale sector in Haryana. Literacy rate has increased from 24.1 per cent in 1961 to 35.84 per cent in 1981 and this has brought philosophically some change in the attitude of people towards their approach to life. But the education system is unchanaged and educated unemployment is continuously increasing. Percentage of work force to total population has increased but in spite of spread in education, the able-bodied beggars still flourish on the earnings of other people.

But we should not think that there has been no change in the position of the poor. Social services sector has shown a marked improvement. 71.9 per cent children in the age group of 6.11 years were enrolled for primary education in 1979-80 as against 58.9 per cent in 1966-67. Enrolment in 11-14 years age-group has also gone up by 6 per cent during this period. Number of all sorts of educational institutions has also increased considerably. Expansion of above facilities, the number of hospital beds per lakh of population increased to 71 at the end of 1979-80 from a level of 53 in 1966-67. Per capita health expenditure also increased from Rs. 3.59 in 1967-68 to Rs. 23.63 in 1979-80. Out of a total number of 6731 villages, 1316 villages were provided with clean drinking water in Haryana by the end of the year 1979-80. Only 1563 villages were linked with roads in 1967-68. But this figure has gone up to 6110 villages by the end of year 1979-80. The total length of metalled road has also increased considerably. Expansion of above social services has definitely added to the consumption level of the poor because these services have a redistributive bias in favour of the poor. So there has been a considerable improvement by the year 1978-79 (33rd round). The percentage of population below the poverty line has dropped to 37.79 per cent in rural areas and 31.07 per cent in urban areas as against the corresponding figures of 44.89 per cent and 35.48 per cent in 1973-74. But still our policy to remove poverty with growth has not succeeded fully because in spite of encouraging growth rates shown by the state economy, there is a long way to go to ensure the minimum standard of living for the large number of people.

SIXTH FIVE-YEAR PLAN (1980—85) endeavours to realise the following goals :

(i) A diversified and dynamic economy capable of a minimum 6 per cent annum growth rate;

(ii) substantial increase in per capita income and reduction in the incidence of poverty by assisting weaker sections especially schedule caste families;

(iii) to provide additional employement opportunities especially in rural areas;

(iv) Universal education for 6-11 years age group;

(v) significant improvement in the quality of life, particularly in rural areas, in terms of working conditions, housing, level of nutrition, education, health, sanitation and welfare, civic and cultural amenities etc.

To achieve the above objectives, an outlay of Rs. 1943.08 crores is proposed in the sixth five year plan 1980-85. The strategy adopted and pattern of allocation is the same as in earlier plans. Irrigation and power, with 58.7 per cent of the total outlay, has been given top priority. Social services sector, given the second place in priority, will contribute 42 per cent of the total continuing employment to be generated during the plan. Minimum needs programme with 10.6 per cent of the total outlay will benefit the weaker sections of the society and thus contribute towards improving the quality of life of the people.

Foodgrains output is expected to reach 79.00 lakh tonnes in 1984-85 from a level of 65.00 lakh tonnes in 1980-81 i.e. 5 per cent annual increase is anticipated.

In industrial sector, out of a total outlay of Rs. 32.00 crores, about 61 per cent will be spent for the development of village and small scale industries with a special emphasis on rural industrialization.

SUGGESTIONS : The planners of Haryana should keep following points in mind to enable proper pace of development in the state.

(i) Power is the most important infrastructure facility needed for development. So, state government should prepare plans for power generation and implement these programmes on war-footing. It will help both the agricultural and industrial sector.

(ii) Resource allocation in Haryana has been biased against the industrial sector. The state should allocate due share to this sector to enable healthy and smooth development of this sector.

(iii) The government should curb speculation in the allotment of industrial plots. Better coordination should be ensured among various agencies and the services of the field staff should be utilised to weed out ghost unit. Sick units should be identified and, if found viable, all help should be made available to those units. All these steps will ensure the growth of small scale industries in Haryana and also provide additional employment opportunities on a continuing basis.

(iv) Haryana is the best suited for agro-based units. To increase agricultural production, emphasis should be laid on minor-irrigation.

(v) Along with the increase in state income special programmes for the control of population are essential to solve the problem of unemployment and poverty. To achieve it, the number of public health centre and sub-centres should be increased. Moreover, every adult member should be provided population control facility free of cost at his door-step. ☐

Gujarat poised for prosperous Era

(*Continued from page* 19)

a spurt from Rs. 10,641 lakhs to Rs. 85,890 lakhs during 1979-80. The diversification of the industrial base has become possible with extensive oil finds in the State and the setting up of the oil refinery, fertiliser units and the petrochemical complex.

ROAD DEVELOPMENT. There has been a more than a three fold augmentation of road length in the State between 1950-51 and 1979-80. The total road length which was 22,629 kilometres in 1960-61 has increased to 45108 kilometres in 1979-80 and to 47426 kilometres in 1980-81.

THE STATE ROAD TRANSPORT Corporation provides direct bus services of over 82.68 per cent of towns and villages covering about 96 per cent of the population as on 31-3-1981. Another 15 per cent villages covering an additional 5 per cent of the population can avail of bus services within a distance of 3 kms. from them. The number of motor vehicles on road has risen from 36,303 in December, 1960 to 3,58,109 in March, 1980.

LITERACY in Gujarat was 21.7 per cent in 1951 which increased to 43.8 per cent in 1981. In the field of technical education, the State has by now 7 Engineering Colleges with an intake capacity of 1,885 and 19 polytechnics with an intake capacity of more than 3,700. There are 22 industrial Training Institutes with more than 8040 seats.

THE MORTALITY RATE in the State has come down to 13.1 in 1979. The average expectancy of life for males has gone up from 40.8 years in 1951—60 to 54.8 in 1976—80. A well dispersed net work of 251 Primary Health Centres and 2,600 sub-centres serves the rural areas of the State and provides both preventive and curative health cover.

A package of incentives for promoting the industrialisation of the backward areas and a pragmatic policy of encouraging industrial units in the private and joint sector are among policy decisions taken by State Government. The accent on co-operatives for undertaking a wide range of activities spanning agricultural credit, input supply, storage and marketing is designed to ensure the necessary institutional support for economic activities in the rural areas.

Panchayat Raj in Gujarat has already created a stable base for the decentralised exercise of power.

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20 Point Programme in Kerala

C. S. Pillai

KERALA CHIEF MINISTER, Shri K. Karunakaran said that the collectors should thoroughly know the salient aspects of the new 20 Point Programme, and try to implement them at the District level itself with top priority and continuous attention.

He was addressing a two day conference of District Collectors in Trivandrum on October 5, 1982. He also called for special efforts to speed up land acquisition proceedings connected with Plan Schemes.

The Chief Minister said that in order to ensure speedy disposal of issues, the Collectors should set apart at least one day in a week to meet members of the public and to listen to their complaints at taluk and block headquarters. He has requested the collectors to show maximum sympathy and consideration to the under-privileged sections of the society like Scheduled Castes and Scheduled Tribes and also Adivasis.

As regards the Plan Schemes, Chief Minister made it clear that while every effort should be made to spend the budget provisions in full, the emphasis has to be on the achievements of the prescribed physical targets in full measure. Expenditure figures are very often highly misleading and there is no point in spending the budgetary outlays unless the target in real terms are achieved, he added.

Sikkim Power Scheme Cleared

The Planning Commission has approved a scheme for installing diesel generating sets at Gangtok in Sikkim at an estimated cost of Rs. 1.18 crores.

The scheme envisages installation of four 562 KVA capacity diesel generating sets at Gangtok with control equipment, switchgear and stop-up transformer. The scope of work also includes civil works, colony, spares, transportation, erection and commissioning of the sets.

The power generated at 415 volts will be stepped upto 11KV and will be fed into the existing system.

Garden flower industry in West Bengal

Syed Rezaul K. Khondakar and Bibhas Chandra Mazumdar

IN WEST BENGAL, COMMERCIAL floriculture has assumed the form of an important trade. Flowers are grown almost throughout the State and there are some regions where the cultivation is done more intensively for commercial purposes. Some of such areas are Panskura and Kolaghat region in Midnapore district, Ranaghat in Nadia district, Diamond harbour in the 24-Paragnas, and Kalimpong in Darjeeling district.

It is estimated that flowers are grown in about 15,000 ha area in the State. A variety of flowers, namely tuberose, rose, chrysanthemum, orchid, gladiolus, marigold, aster, cosmos, zinnia, antirrhinum and many other annuals are grown commercially.

The annual turnover of commercial flower in West Bengal has been estimated to the tune of about 3 crores rupees. This figure does not include the value of seeds and other planting material of ornamental plants.

COMMERCIAL FLORICULTURIST gets a significantly high margin of profit from this trade. It has been observed that an irrigated area of one bigha of land (0.33 acre) in the Midnapore district alone is sufficient to maintain a family of 5 members throughout the year.

A study made by the authors in the southern part of the State has indicated that income is very high from flowers like tuberose chrysanthemum, aster, marigold etc and moderate profits come from other flowers like cosmos, zinnia, coreopsis, antirrhinum, corn flower, gypsopyla etc.

TABLE 1

Flowers	Cost of production per acre		
	Expenditure (Rs.)	Income (Rs.)	Net Profit (Rs.)
Rose (1st year)	31,000	39,000	8,000
Rose (2nd year on wards upto 4th year)	26,000	44,000	18,000
Tuberose (average of 3 years)	33,000	56,000	8,000
Chrysanthemum	15,000	21,000	6,000
Aster	10,000	14,000	4,000
Marigold	9,000	11,000	2,000

Table-1. The approximate cost of production and net profit of some flowers grown in the plains of West Bengal.

It is interesting to note that almost all the members of a flower growers' family are engaged in the production machinery. Others involved in this trade are wholesale dealers, retail flower sellers, nurseries, florists, decorators and packers.

AGRO PRACTICES : The conventional agro-practices are mostly followed by the growers. Some suitable agro-techniques have been developed by the growers themselves by hit and miss method. For example, in case of flowers like antirrhinum, aster and chrysanthemum, the growing season is shifted by many to make those flowers available earlier in the market or later in the season than the normal time of harvest. Use of organic manures in large quantity is done in flower cultivation. Control of pests and diseases is effected mostly by uprooting and cleaning the garden. Use of plant protection chemicals is negligible. Ashes are used in appreciable quantity for mulching as well as to supply nutrients. Sometimes flowers are inter cropped with seasonable vegetables like chilli, cauliflower etc.

It is estimated that flowers are grown in about 1500 ha area in the State.

The present system of disposal of the produce does not seem to be encouraging. The wholesale dealer collects the harvested produce from the growers at the growing point either directly or through middlemen and sends it to the urban markets. More than 80 per cent of the produce of cut flowers is sent to the Calcutta. A certain percentage is also transported to Bombay, Lucknow, Rourkella, Tatanagar and Ranchi.

The packaging of the flowers is done in conventional bamboo baskets, covered with gunny cloth and suitably tied. Sometimes, strong paper boards are also used as the packing material.

Packing of the produce is however, done very carelessly and nearly 15 per cent to 20 per cent of the flowers get damaged due to unscientific handling and packaging.

Floriculture has a great importance in utilizing of land and manpower. It provides employment to whole of the family of the flower grower.

THE TRANSPORT OF THE ENTIRE produce is done by Railways. Hand driven or power driven vehicles are employed to carry flowers from the railways station to other places like main business centres, nurseries, showrooms, florists, decorators, wholesale dealers and retailers.

SEASONAL PRODUCTION AND OUTTURN : Although the principal season for growing the flowers is winter, but some flowers are grown throughout the year. The various flowers grown in different seasons and the profits earned by the growers have been listed in the following table :

TABLE II

Season	Flowers	Profit/acre (Rs.)
Summer	Zinnia	3,000
	Cosmos	2,000
	Gaillardia	3,000
	Gomphrene	1,500
	Marigold	1,500
Rainy	Jasmin	12,000
Winter*	Carnation	7,000
	Antirrhinum	6,000
	Coreopsis	2,000
	Gyzophila	2,000
	Lady's lace	1,500

*Some other winter flowers have been given in the Table-I.

SCOPE OF IMPROVEMENT : (a) Disposal : Sometimes quite a large part of the produce is found to remain unmarketed. It practically goes into wastage. Adequate facilities to keep the flowers fresh for a considerable period may greatly help in utilization of the undisposed flowers. Many of the flower may very well serve as the raw materials for a number of industries, e.g. tuberose, jasmines, rose and other highly scented flowers may be suitably used in extracting essential oils and other aromatic substances. Even cottage industries may be developed to utilize these flowers. Some flowers like nyctenthes etc. may be used to extract pigments and accordingly, may be of high value in textile dyeing. Some flowers also find effective use in pharmaceutical and cosmetic industries as well. Encouraging industries at the growing point may pave the way in utilization of the flowers which are not bought.

Commercial floriculturist gets a significantly high margin of profit from this trade.

The present system of transportation of the flower also causes damage to a part of the produce. Refrigerated transport is a suitable means to avoid this wastage in transit.

Financing : Lack of adequate funds is sometimes a handicap to a large section of flower growers in some areas. Timely financing from the Banks or other agencies will prove to be of great value to the bonafide growers.

Supply of Inputs : The scarcity of certified seeds, planting materials and other agricultural inputs is also keenly felt. Suitable arrangement to supply these items to the growers is undoubtedly essential.

Agro-techniques : The value of training the flower growers with the modern techniques can not also be underestimated. The Government should come forward in posting trained officers and open up training centres to keep the growers in touch with the improved methods of commercial floriculture.

Floriculture has thus a great importance in the economy, land utilization and utilization of man power in the southern part of West Bengal. □

(*Continued from page* 21)

The forests, the natural habitat of the tribals play a vital role in the economic life of the tribals. Government have extended the concession of 17½ per cent of the estimated value of the lease of Minor Forest Produce (MFD) to the Co-operative Societies formed by and for the tribals in the I.T.D.Ps. Government are now considering whether the lease of MFP. to the Tribal Societies should be made free of cost as the Tribal Societies are in initial stages and are not financially sound.

Effects of the measures taken-up under the ITDP Programme and benefits of Tribal Sub-Plan are slowly and steadily beginning to percolates down to tribal community, the Koraga's of South Kanara.

Rs. 35 laks Profit to HZL

Inspite of continuing difficult environment, Hindustan Zinc Ltd., Udaipur has been able to close the financial year 1981-82 with a profit of Rs. 35 lakh as compared to a loss of Rs. 283 lakh in the year 1980-81.

During 1981-82 there was an increase of 23 per cent in the sales turnover compared to the previous year. Tonnage-wise, the sale of principal products namely zinc and lead increased by 9 per cent and 19 per cent respectively. Sales realization was Rs. 9022 lakh against Rs. 7318 lakh in the previous year.

Preventing Erosion

In the Soviet Union the Institute of Timber Chemistry of the Latvian Academy of Sciences has suggested the use of the waste of the pulp-and-paper industry in combating soil erosion. Under this method the soil is treated with lignin-sulphonate solutions, which form an insoluble porous film letting in air and moisture. Seeds freely grow through this film, but the fertile layer is not washed out by rains and thawed snow.

Researches showed that the proposed composition efficiently cements sandy soil and preserves its mechanical strength within three to five years. Micro-elements and other useful substances contained in the film largely increase harvests.

(*Soviet Features*)

A study of a small town: Zaidpur

Mohan Lal Soni

ZAIDPUR, POPULATION—17,558 in 1981, is situated on a semi-metalled road from Barabanki to Sidhaur—leading to Debiganj, about 19 kilometres south-east from the former. It is an old town. Its old name was Suhelpur. It has a town area comprising of 0.73 sq.kilometres, showing a density of population more than 24,000 persons per sq. kilometre.

A metalled road runs from Zaidpur to join the Lucknow-Faizabad State Highway No. 28 and thence to Safdarganj Railway Station. Other unmetalled roads run to west to Satrikh and Chinhat, south-west to Ibrahimabad and south to Kothi. There is a Post and Telegraph Office, a Police Station, a Higher Secondary School for boys and a Cinema hall, recently built here by Uttar Pradesh Chalchitra Nigam but no Roadways Bus Station. The town is electrified. There is neither piped drinking water supply nor sewerage system. Handpumps are the source of drinking water.

Some bhits (mounds) are seen on the south of the road leading to Kothi and on the north of the town near Safdarganj Road. The town is compactly settled. Garhi Kadim, the probable nucleus, is in the west of the main road. Opposite to the Garhi Kadim is the ward named 'Chauhatta', which seems the derivative of the word 'Char Hats', meaning four markets. The town exhibits the traditional morphological form. Business areas are flanking along the main road and interspread with residential areas. Barabanki-Sidhaur Road Serpenting through the town, is the chief business area. Irregular street-pattern in very poor condition, undeveloped and oozing drainage lines, encroachments on public lands waterlogged stress during rains and a very low sky-line characterize the morphology of the town. No distinct business, industrial or residential sectors are found in the town. Most of the families have their work places and tradeshops in their own houses. Their tradeshops are without showrooms.

Population of Zaidpur remained stationary during the last quarter of the 19th century, but during the next seven decades (1901—71) the population increased at the rate of 39 per cent.

THE BACKBONE OF THE ECONOMY of the town is its industrial character, dominantly household. About 54.6 per cent working population is engaged in industrial activities. The main industry of the town is handloom weaving producing lungies, gamchhas and handkerchiefs. Among the other non-agricultural activities of the town are trade and commerce and other services constituting 17.6 per cent of the total working population. The important trades of the town are of handloom goods, goods of the day-to-day utility and hides. Hides are transported to Lucknow. The town holds a bi-weekly market (Sunday & Wednesday) which is being attended by more than 5,000 persons besides the population of the town itself. Persons of neighbouring villages and businessmen of surrounding small markets are generally coming over here to purchase the handloom goods. The town commands a good service area.

The population of the town appears to have remained stationary as there were 10,680 inhabitants in 1869 and 10,003 in 1891, showing a decrease. This decrease continued upto 1911, when the population of the town was 7,363. Thereafter the population increased continuously. The population increase between 1911 and 1961 (50 years) was about 41 per cent while between 1961 and 1981 (20 years), it was about 60 per cent. The septugenary (1901—71) increase of the population of the town was 39.772 per cent. It is significant to note that the largest number of non-workers is in the age-group of 0—14 years. Working population exceeds non-working population in a very large span of age-group (20—59 years). Surprisingly such a big town with a strong industrial backbone and longstanding town areas, has not flourished well and it is certainly far behind to other towns of the same status and population.

Inhabitants continue to reside in the old low-plinth, dirty and pigeonhole type residences in spite of the prosperity.

THE CLOSE AND COMPACT SETTLEMENT, insecurity caused by centripetal tendencies and orthodox ideas of encouraging the increase of population have very well created an extremely high density of population. Poor means of transportation and communication, lack of highway location and social horizons of the town definitely restricted the growth. Barabanki-Debiganj Road is a link-road on which the town is situated. Although the wards Naya Pura, Bara Pura and Bari Bazar seem to be the new extensions of the town and the sky-line is higher in this part of the town. People generally do not want to show the income, incurred by unauthorised sale of opium (widely grown in the surrounding region), hence prefer to reside in the old, low-plinth, dirty and pigeonhole-type residences.

It was noticed during the field-survey that hardly a few workers of the neighbouring villages are employed in the industrial sector of the town. The social system and stratification of these weavers do not allow the other communities to enter the weaving profession. Although some refugees and sahukars (money-lenders) have entered the profession by becoming stockists of yarn. Thus all the industrial workers are the residents of the town itself.

The decrease of the population between 1901 and 1911 seems due to natural causes, such as bad crops of 1905-1906 and the severe famine of 1907-1908. The highest level of increase during the last two decades (1961-81) is the combined result of the natural growth, increasing medical facilities and encouragement to weavers by the Government through loaning and supplying the yarn at subsidiary rates, which has checked the exodus of the town's population.

Handloom weaving is the dominant industry of the town.

SUGGESTIONS FOR DEVELOPMENT : Establishment of efficient and proper drainage lines. This water again can be used as manured irrigational water for nearly fields.

Supply of drinking water through pipes should be provided.

The dominant handloom weaving industry should run in cooperative sector and Government should supply the yarn on subsidiary rates to these cooperative weaving centres. Thus weavers will escape the exploitation and high-handedness of the money-lenders and the increasing malpractices of the banks in extending loans. Further, the loans should be sanctioned to these cooperative centres for the construction of air-conditioned workplaces because it was observed during the field-survey that the rainy season is not fit for this weaving industry as the yarn inflates by absorbing moisture and it becomes difficult to weave the cloth. The idleness during the rainy season can thus be avoided.

Town area authorities should observe strictly that the public land is not encroached upon and must check the pigeonhole-type residences. There is ample space for the expansion along the roads leading to Barabanki, Safdarganj, Sidhaur, Kothi, Ibrahimbad and Satrikh.

Some road-development proposals are also given here, which will place the Zaidpur on main routes on the one hand and there will be a saving of distance and fuel between important places of the region.

(a) A wide link road should be developed from Ramnagar to Kothi via Saadatganj, Rampur Bhawanipur, Safdarganj, Yakutganj, Zaidpur and Usmanpur. This will be a direct road between Bahraich and Rae Bareli saving a distance of about 15 kilometres.

(b) A road from Barabanki to Debiganj may be developed further east upto Jagdispur via Subeha, Mawaya Rahmatgarh and Mahona Pachhim. This will place the Zaidpur on Barabanki-Jagdispur-Sultanpur Highway.

(c) A direct road should be developed between Chinhat and Ramsanehighat via Barauli, Satrikh, Harakh, Tikra, Zaidpur, Neoghana and Mau.

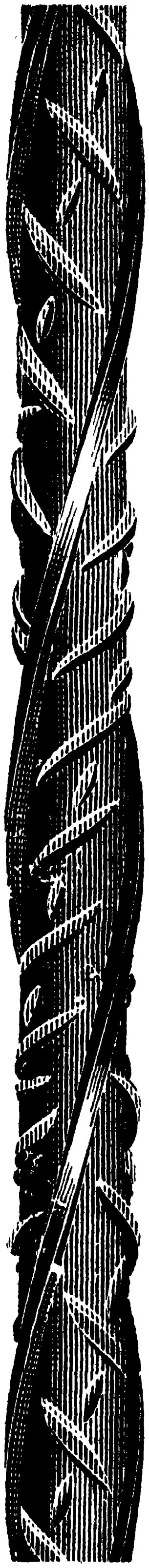
All these roads will provide a highway location to Zaidpur alongwith other important settlements of the region. An increase in income of the Zaidpur Town area by octroi due to increasing traffic passing through the town, will facilitate in discharging the welfare schemes for the town.

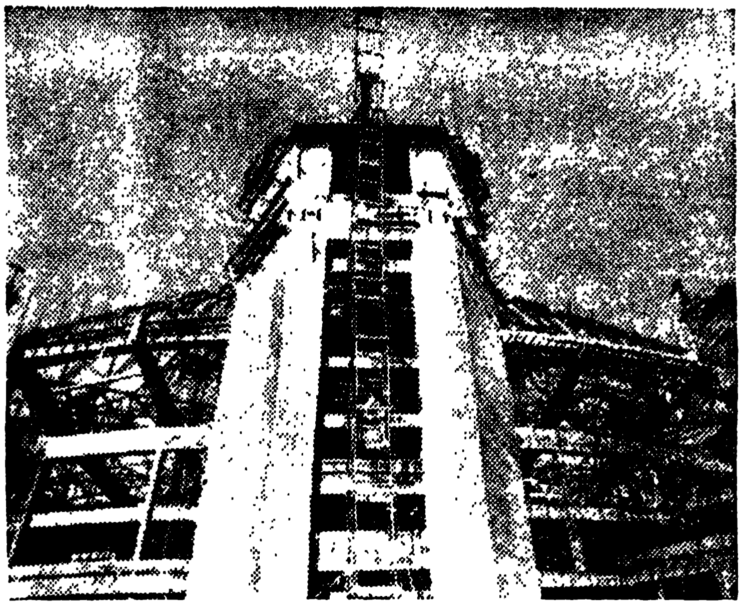
Agriculture Information and Communication Workshop

The Agricultural Information and Communication Workshop was organised by Directorate of Extension, Ministry of Agriculture in collaboration with Jammu and Kashmir Agricultural University and Agriculture Production Department, Jammu and Kashmir at Srinagar, from 10th to 15th August 1982. The major recommendation made by the Workshop was for strengthening agriculture information services at Regional and Central level by setting up coordinating committees on the I.C.A.R. Research pattern. The regional committees would survey, assess and monitor functioning of agriculture information services and proposals would be submitted to Central Coordination Committee for taking up as centrally sponsored schemes. The coordination committees would discharge combined state-central responsibilities in agriculture extension, prevent wasteful duplication, economize in money, manpower and time, reduce regional disparities, and promote transfer of technology.

The Workshop also recommended training of agriculture department artists by National Institute of Design, as per proposal earlier circulated, and short training courses in communication techniques, printing, and press work, journalism etc. for information staff at National and International Institution. The training was to be coordinated by Directorate of Extension.

Other recommendation related to setting up of farm and home units in Doordarshan, Inter-state tours by agriculture information officers and Special Information Workshop to be held by Directorate of Extension for Women Extension Workers, and backward regions and inter-regional tours by small groups of information officers.





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Constraints in education in Garo Hills

J. C. Singha

THE composite district of Garo Hills is predominantly inhabited by the tribals who form about 80 per cent of the population. The Garos are the major tribal community and they follow matrilineal social system. For this study the composite district of Garo Hills (East and West) is taken into account and is stratified into Hill Region and Plain Region. The reference year for the study is 1980-81. The study covers 42 schools.

The district is divided into two mauzas and there are 2,338 villages. Only 47.7 per cent of the villages are having one Lower Primary School. Political bickerings and rivalries, natural barrier, inaccessibility of the area obstruct the spread of schools. A large number of schools have been established in the district during the post independence period, yet inadequacy of schooling facilities persists.

PERCENTAGE OF LITERACY in the district of East Garo Hills is higher than that of the district of West Garo Hills. The percentage of literacy amongst females in East Garo Hills was 26.43 in 1981 as compared to 7.78 for males. However, the proportion of literate females in the district of West Garo Hills is lower than that of males. Though the Garo society shows characteristics of a typical matrilineal social organisation, yet daughters are not unusually favoured in comparison to sons. Parents willingly spend for the education of both the sons and the daughters.

Again, the presence of imbalance between the different mauzas in case of density of population, number of villages and hamlets and rate of literacy are quite prominent. This may be attributed to mode of agriculture, inaccessibility of the area and the physical facilities for education.

In Garo Society a grown up girl is tied to domestic chores and is expected to be like a shadow of her mother. Girls tend to drop out of school earlier than the boys.

The hostel facilities are very scanty. Until recently, there was no hostel accommodation for girls attached to the Tura Government College. The tribal students are provided with scholarships by the State and Central Governments. But the students feel that the amount of scholarships is small for prosecuting studies.

PRIOR TO ARRIVAL OF THE BRITISH, the Garos were literally a preliterate people—they did not have any written literature. At about 1800 AD English-Bengali-Garo dictionary was written.

The educational facilities available, with reference to the distance from the district town of Tura show that villages having better educational amenities are those whose distance from the nearest town is between 51 and 100 kms. Next comes those villages whose distance is between 26 and 50 kms. from the nearest town. From 101 kms. and more the number of educational amenities available in these villages is gradually declining.

Communication is a vital problem in the district.

A considerable number of villages (72.24 p.c.) are grouped under population with less than 200 persons and 40.19 per cent of the total population live in these small villages. Some villages are having 4 or 5 hutments only, indicating difficulties in the extension of education.

Only a few villages (barely 4.5 per cent) are connected by pucca road. The village connected by kutcha road constitute only 29.6 per cent. Geographical isolation, thus, constrains the extension of education among the tribal communities in the district.

Communication is the vital problem in the district. The settlements are often intersected with streams and rivulets. To obviate this difficulty it may be suggested, in a village where there are about 70 persons, taking 43 per cent of the population in the age-group 0-14, a school can be established. The teacher-pupil ratio, at the initial stage may be unfavourable. But, in course of time, with the growth of population, the annual enrolment is bound to increase.

External Constraint :—Literate and educated parents are more prone to send their children to school than the illiterate parents. Educational level of the parents contributes to a greater extent in sending the children to school and further continuance of the children's education from primary to higher levels of education.

The tribal society is not stratified on social class lines with distinctive subculture, yet certain hierarchial divisions can be discerned on the basis of different levels of occupation, income, education etc. The stratification is, however, purely statistical in nature.

The tribal economy is predominantly agricultural. It is observed that the big cultivators can employ outside labour for agricultural work and, therefore, they can spare their children for school, whereas the medium and small cultivators cannot spare their children for schooling as they cannot afford to employ hired labour for agricultural work.

Variation in enrolment of children is seen among families of different income brackets. Only 2.02 p.c. children are drawn from low income group whereas there are 64.26 per cent from the medium income group as against 100.00 per cent from high income group.

During the period 1970-71 to 1978-79, the enrolment of students has increased by 43.28 per cent. Another interesting phenomenon is that the growth rate of enrolment of boys (29.73 per cent) is less than that of the girls (62.42 per cent) during the period 1970-71 to 1978-79.

IN GARO SOCIETY, A GROWN UP GIRL is tied down to domestic chores and she is expected to be like a shadow of her mother. The girls have to assist the overworked mothers at home. The girls also look after their younger brothers and sisters from their early age and the girls marry earlier; as a result, the girls tend to drop out of school earlier than the boys.

3.25 per cent of the children are irregular in their attendance because of festivals. The children participate in religious function, such a *wangala*. The festival continues for some time. After the expiry of the festival some children do not attend school any more and in some cases, they are turned out from the school owing to their absence from school for a long time.

Admission to Grade I is kept open throughout the year. Thus, the children who join towards the fag end of the academic session are treated as stagnation case though technically speaking they do not constitute the real class of stagnation.

Each individual member in a Garo family is granted some freedom to have some personal incomes by putting in additional labour besides contributing to the common fund of labour to the household. Boys and Girls of a family can earn an income from selling wine, vegetables etc. They also work as casual labour for earning an income. A grown up bachelor is allowed to clear "aaba' plot, shifting cultivation plot, on his own. Such plots are known as "pateni" "a 'tot", the plot of a bachelor, and no part of the produce from such plots is used for the maintenance of the household. The money derived from selling crops of an "a'tot" plot can be appropriated by the bachelor to meet his personal needs. Now-a-days, many bachelors meet their expenses in the school from the income of their "a'tot" plots. It is also found that some boys work somewhat like a servant in a wealthy house and from the income they continue their studies.

MAJORITY OF THE TEACHERS (54.43 p.c.) in the district belong to Garo community and are under-matric (69.57 p.c.). Majority of the teachers (65.23 p.c.) are equipped with the local dialect indicating that there is no language problem in teaching. The teachers are not interested to stay in the same place owing to hardship in life. Though majority of the teachers are provided with a house by the villagers, yet they are not satisfied with the arrangement.

There is no incentive for working in the inaccessible area.

Constraints in the extension of education in the district may be divided into economic and non-economic constraints. Economic planning and non-economic planning must not only go side by side but must be carefully integrated as they complement one another.

Coal power transmission line scheme

The Planning Commission has approved the Nagjhari (Karnataka) Ponda (Goa) double circuit inter-regional transmission line scheme at an estimated cost of Rs. 6.97 crores.

The scheme would enable Goa to meet its load requirements from the Southern Region, and also at times of emergencies permit the Union Territory to draw its share of power in the central generation in Western region through southern region or vice-versa.

The work comprises construction of 34 KM of 220 KV double circuit line from Ponde to Goa|Karnataka border and another 62 Km double circuit line from Nagihari to Karnataka|Goa border.

The scheme also includes construction of terminal bays at Ponda and at Nagjhari.

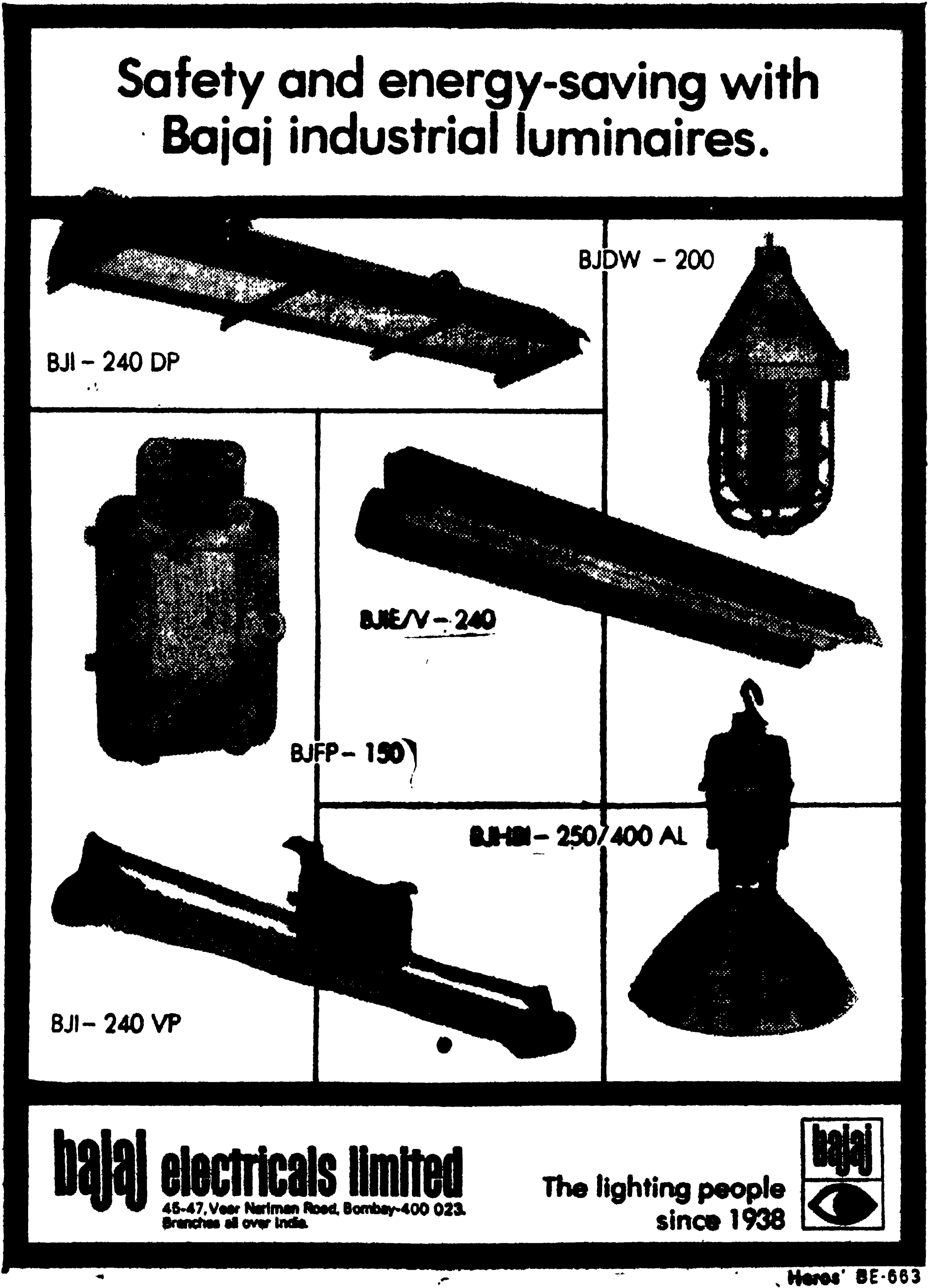
Steady Progress of Pisciculture in M.P.

Special efforts are being made to promote pisciculture in Madhya Pradesh. In view of this, a target of production of seven crore fingerlings and 16,500 tonnes of fish has been fixed during the productivity year 1982-83. As against the previous year this is 1,860000 more in respect of fingerlings and 3387 tonnes more in respect of fish production. Under the World Bank Project 4 fingerling of hatcheries are to be set up here through M.P. State Fisheries Corporation.

Scholarships to students of 148 backward classes

The State Government have decided to award scholarships to students belonging to 148 backward classes whose family income does not exceed Rs. 1,000 per month upto higher secondary on par with students of Scheduled Castes and Scheduled Tribes.

The State Government have selected these backward classes as per the recommendations in the interim report of the first M.P. Backward Classes Commission constituted by the Government under the Chairmanship of Shri Ramji Mahajan, M.L.A.



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Review Article

India and the atom

INDIA's APPROACH to the development of nuclear energy and nuclear technology generally is of particular relevance at this point of time. Even before independence, India's eminent scientist, planner and visionary Dr. Homi Bhabha had realised that India's future lay in developing atomic and related sciences. Being as much a planner as a gifted leader he took practical steps to create facilities for research in the new sciences and build up a reservoir of scientists. This was to stand the country in good stead in later years. India's science and technology policy from the beginning has been, not to import sophisticated machinery or apparatus whose mysteries may remain enclosed in 'black boxes' but to create scientific talent that could develop and build within the country all machines and equipment that the country may need.

India's first Prime Minister, the father of India's planning was keenly aware that India needed science not merely for rapid economic development, which is vital, but equally for freeing the people of the country from ignorance and superstition.

As this book has stressed, this historical context should not be forgotten in discussing India's attempts to develop nuclear and related sciences. The country had other compulsions too in endeavouring to utilise the new technologies. These, as the author has brought out clearly are, firstly the increasingly important role of the new technology in providing energy, since it is the key to industrial development. Considering the rising prices and reduced availability of oil and the difficulties and logistic efforts needed for mining and transporting large quantities of coal from Eastern India over long distances, the country must harness its nuclear and hydro electric power potential to the full. Another compelling reason is that nuclear power is far cheaper than power from oil or even coal. This book supports these statements with authentic data based on the operation of commercial power reactors over a period. One of the main reasons for our failure to achieve industrial growth targets set by Planners was the poor performance of the Power Sector. Nuclear Power being more economical than others, except in areas close to the source of hydro electricity generation or collieries, thus deserves to developed on priority, the author argues.

India and the Atom by Col. R. Rama Rao, Birla Institute of Scientific Research ; Published by Allied Publishers, New Delhi ; 1982 ; pp 176 ; price Rs. 50.

Secondly nuclear science has come to play an increasingly important role in preventive and curative medicine, in preserving seeds and articles of food, in upgrading relatively low priced agricultural products such as jute stalks, in monitoring the functioning of critical components of machinery, in excavation and mining engineering and in a host of other areas. All these areas are of great social and economic significance for the country.

Thirdly, for the proper development of nuclear technology, several associated areas of technology such as electronic instrumentation and computor technology, chemical engineering for refining materials to nuclear standards of purity, metallurgy of rare metals and alloys and safety engineering have also to be mastered. Hence a country developing nuclear science and technology would also be developing several other related areas, all of which would serve to upgrade national industry.

Fourth, the implications of nuclear technology development for India's future growth. Taking a look at the shape of things to come, the book points out that India's power reactors now in operation, (thermal reactors) represent an intermediate stage in the development of nuclear power. They are inefficient in the sense that they utilise no more than one per cent of the uranium fed into them. The next generation of reactors, Fast Breeder Reactors, utilise uranium for more efficiently. They could also be utilised for converting thorium into a useful nuclear fuel, uranium (233). This is of critical importance for India which has thorium ores in abundance but meagre uranium reserves. USA, the Soviet Union and other technologically advanced countries are developing fusion machines which would burn heavy hydrogen recovered from sea water, thus hoping to tap a virtually inexhaustible source of energy and solving man's energy problem for the foreseeable future. Working models of fusion machines are likely to be produced in USA well before the turn of the Century, although the development of commercial fusion machines may be a further decade or two away. India would do well to start studying fusion phenomena as well as the technology of fusion-fission hybrid reactors which would serve as fuel factories as well as power stations. The study points out that India ought to start now to develop these reactors and proposes the seting up of a Fusion Research Centre under the overall direction of BARC.

Finally, the security implications of nuclear technology development. Nuclear technology has far reaching implications for national security. Nuclear powers under USA's leadership are averse to countries, especially third world countries, developing nuclear weapons. The arguments advanced are that third world countries possessing nuclear weapons may act irresponsibly ; and that nuclear weapons are expensive and third world countries would be ill advised to devote resources for this purpose. The author, a well known defence expert, points out that Western Powers have secretly helped some of their client states e.g. South Africa, Israel and Pakistan, to acquire fuel and other materials for building the bomb. Their real reason for opposing genuinely non-aligned countries such as India emerging as nuclear powers seems to be that with more third world countries becoming nuclear powers, they would find it more difficult to coerce smaller countries. Also when third world countries develop nuclear weapons they would acquire at the same time general technological competence, making it more difficult for the West to procure the third world's raw materials at nominal cost as at present. These are important considerations but in the author's judgement there is an even more fundamental reason why India would need nuclear weapons; and that is that a non-nuclear India will not be able to safeguard its security if threatened by a nuclear power. With large scale deployment of nuclear weapons and rapid development forces in the Indian Ocean, an emerging nuclear power nearby besides another nuclear power also in the region, India can hope to be left alone only if others realise that an attack on India would be an expensive proposition. The study argues that the cost of a modest and viable nuclear programme would be well within India's means.

This well documented and ably written study will be invaluable to research scholars officials concerned with national security, international relations and science policy as well as a wide cross-section of the public.

Sethu Rao. S.

A commendable exercise

Studies in Evaluation by K. Puttaswamaiah, Published by Oxford & IBH, New Delhi, 1982, Pages : 338; Price: Not mentioned.

AS THE BLURB of the book under review succinctly states that the lamentable lack of evaluation and its concomitant monitoring, has been the deathknell of many useful programmes, dampening growth and rendering waste of public funds, the book is a forcible document that rams home the theme that the evaluation of projects and programmes is the keystone of successful microeconomic planning.

Dr. K. Puttaswamaiah, who is a senior director, Planning Department, Government of Karnataka and a renowned economist, has made a pertinent statement when he claims that evaluation is considered an integral instrument of planning in the country and a process by which the results of plan programmes are ascertained.

The author notes that evaluation is considered in three stages : (i) before launching a project which is called ex-ante or pre-project evaluation ; (ii) when the programme is in operation which is called concurrent evaluation and (iii) after the programmes are implemented which is called end or ex-post evaluation. The book contains a few case studies, corroborrating these three stages. A study on 'investment for infrastructure—pre-project appraisal' about the Tungabhadra project ayacut for bridging the gap in the infrastructure system explains the first stage evaluation. A study on 'evaluation of road programme' and 'industrial estates' both in Karnataka illustrates the concurrent evaluation stage. A few studies on manpower evaluation, training of rural artisans and functions and effectiveness of gramsevakas explain end or ex-post evaluation.

The book would have been illustrative and expensive if it could have accommodated more projects from different states, without restricting itself to Karnataka alone. Although this has brought a regional bias to this book, the fact that an earnest effort has been made to pinpoint the efficacy of evaluation of projects is a commendable exercise. The author is wise as he has not allowed himself to the temptation of using technical jargons indiscriminately and to this extent the book scores a gain for all sorts of readers.

G. Srinivasan

Decision making in Government

POLICY MAKING IN GOVERNMENT Edited by K. D. Madan, K. Diesh, Ashok Pradhan and C. Chandra Sekharan. Published by Publications Division, Ministry of Information and Broadcasting, Patiala House, New Delhi-110001. First published 1982. pages 716, Price Rs. 100.

THIS WELL-THOUGHT out volume is at once highly attractive for the wealth of information it gives on the all-important aspect of the cynernetics of decision making in government. An array of experts and authorities have discussed the many sided ramifications of the issues involved. The editors have taken pains in arranging the papers under nine chapters in a very appropriate manner.

K. D. Madan observes that policy formulation encompasses decisions which are aimed not at a solution of transitory problems but have a long-term perspective and affect the destinies of the community at large or of an identifiable group therein in a substantial measure. "While an analysis of socio-economic and political factors, resource constraints, organisational structure, etc., and the changes in these perceived over a period of time through a feedback process, are important elements in policy for mulation, not all policy decisions arise from purposive analysis. Many are the outcome of opportunities, held beliefs, spasmodic pressures or sheer chance."

In short review like this one may not be able to do full justice to the book. The papers fall in wide ranging area from policy sciences and social services to integrated rural development and the public sector. They have surely an integrated value as they are germane to policy making areas in the government. It is quite appropriate that decision making in food policy, science and technology, economic and monetary policies also finds place in the book.

The book commends itself to academies, researchers and administrators for referring to it from time to time so that their sights are lifted and perspectives improved.

Navin Chandra Joshi

As we go ahead with 20-point programme

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Biogas as alternative source of energy

In our country between 30 to 40 crore tonnes of animal dung is available as base for biogas production. Large quantities of organic wastes are mixed with animal dung for producing biogas. If all these waste materials are used, it is estimated that about 7,000 crores cubic metres of gas equivalent to about 16 crore tonnes of fuelwood could be produced.

In the Sith Plan, a national biogas development project has been launched. Under this project ten lakhs of family size biogas plants within the plan outlay of Rs. 50 crores would be set up. Till the end of September 1982, 8,991 biogas plants had been installed. ☐

Setting up small industries

Considerable importance is attached to the promotion of village and small industries in the Sixth Plan, as there is large employment potential in the industries. Stress will be on the achievement of the production and employment targets for village and small industries set in the Sixth Plan, especially in sericulture, carpet weaving etc. Action has been taken to revive the sick industrial units. The State Governments have been advised to take more active interest in the scheme of augmenting the production of controlled cloth in the handloom sector so that more cloth is available for the rural poor. Till the end of September 1982, 53,320 small scale units had been set up. ☐

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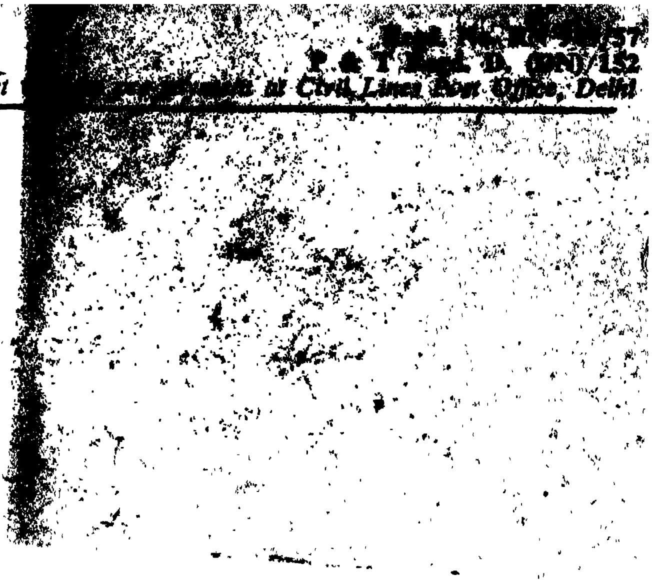

More power for agriculture

Three million hectares of land will be brought under irrigation in each of the three remaining years of the Sixth Plan. The 20-point programme also stresses the need to irrigate more land and disseminate technologies and inputs for raising the output of dry lands.

The rural electrification programme is geared up towards achieving the goal. Energisation of pump sets enable the irrigation of new areas. So far 1,16,492 pump sets have been energised against the target of 3,78,055 for the current financial year. ☐

As we go ahead with 20-point programme

Rural electrification

To raise the living standards of the rural people, electrification of the backward and tribal villages has been given high priority. Sixth Plan envisages electrification of 98,000 villages at an outlay of Rs. 1173 crores. Progress recorded in the implementation of the programme upto the end of Sept., 82 has been 6,936 villages against the target of 26,254 villages targetted during the current financial year. ☐

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Why not tax income from agriculture!

—a symposium

1. Dr. V.K.R.V. Rao

In this issue

2. Dr. C.H. Hanumantha Rao

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3. Dr. D.T. Lakdawala

Feb. 16-28 issue

4. Dr. A.S. Kahlon

Investment in agriculture

THE 53-YEAR OLD Indian Council of Agricultural Research the Apex organisation for all agricultural and animal husbandry research and education in the country, has been doing remarkable work in the field of agricultural and animal research. An outstanding achievement has been the attainment of self-sufficiency in food by the country. There has been increases in production of cereals particularly from 1965 onwards. It heralded the Green Revolution in the country. These increases are largely due to the introduction of high-yielding varieties of wheat, rice, bajra and maize and their adaption to Indian conditions. Indian scientists who received these high yielding varieties of cereals from abroad improved them and also worked out packages of practices including agronomic and plant protection measures in respect of these crops. 22 Agricultural universities which were set up on the American pattern forged a link between the scientists and the farmers.

In 1965-66, 10.39 million tonnes of wheat was produced. As against this, in 1978-79, the production went up to 34.70 million tonnes. In case of rice, as against 30.59 million tonnes in 1965-66, the production went up to 53.79 million tonnes during 1978-79. Total foodgrains production which was 72.34 million tonnes in 1965-66 reached 125.60 million tonnes by the year 1977-78. Such an achievement is unparalled in the history of agriculture in India. The entire credit for this goes to ICAR.

Research :

Under the ICAR there are 35 research institutes including three institutes of national importance dealing with various aspects of research and education. To intensify research in multi-location-cum-disciplinary basis, 65 All India Coordinated Research Projects, including 5 Project Directorates, one project for Tribal Areas with 30 centres, and two National Research Centres have since been started. The ICAR has also established a very large number of first line training institutions namely, Krishi Vigyan Kendras, has undertaken operational research projects and launched a massive Lab-to-Land Programme for the transfer of appropriate technology.

The Sixth Plan of the ICAR approved at a total outlay of Rs. 340 crores for implementing 187 plan schemes has been in operation for two years. The main thrust in the field of crop production during 1981 was on varietal improvement and development of new technologies to diversify agricultural production.

The ICAR continues to support the existing Advanced Centres for Post-graduate Research, taken up with the UNDP assistance. The National Demonstration Project has been reoriented to provide main thrust on transfer of technologies. The demonstrations would cover the entire farming system, in addition to multiple cropping in 47 districts. In addition about 1000 demonstrations were undertaken on pulses and oilseeds.

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The symposium

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Why not tax income from agriculture!

As you, dear reader, go through the first two articles in the symposium we begin with this issue, we place here for you few facts relating to our agrarian economy which are very relevant to the study on tax or no tax on agricultural incomes.

Today, in our country side, of the 70.5 million operational holdings, 35.7 million or more than 50 per cent have less than one hectare each and account for only 9 per cent of the total area. These fall under the category of what are called marginal and sub-marginal farmers whose holdings are not viable for a basic minimum livelihood. Next come those whose holdings fall between 1 and 2 hectares and are classified as small farmers, numbering 13.4 million or 19 per cent, accounting for about 12 per cent of the total area. These holdings also, with very few exceptions, fall in the category of non-viable agricultural holdings. The bulk of the viable holdings, which exceed 2 hectares each are put under three categories viz, semi-medium, medium and large with 2 to 4 hectares, 4 to 10 hectares and above 10 hectares each respectively. The semi-medium holdings number 10.7 million or 15.2 per cent and account for 18.5 per cent of the area. Medium holdings account for 11.2 per cent and about 30 per cent of the area, while large holdings, which number only 3.4 per cent, account for as much as 31 per cent of the total area.

This briefly, in statistical form, is the state of our agricultural structure in which we operate to boost up our farm out-put, firstly, to meet our needs and, secondly, to work out strategy for alleviating poverty in rural India.

To further clarify the situation, we also place before you the analysis of our agrarian economy as done by the National Commission on Agriculture (1976). The three important components of our agrarian structure, says the Commission, are:

(i) the emergence and growth of commercialised agriculture mostly prevailing in areas where agriculture is technologically more developed. It is almost absent in the Eastern region of the country where agriculture is far less developed and where old type of tenancies still persist;

(ii) the emergence during the last two decades or so of a class of modern entreprenuer farmers who are substantial land-holders and cultivate their lands through hired labourers and with new technique. They have grown notably in certain well-defined areas where material factors are favourable for modernised agriculture. They are drawn largely from the ranks of ex-semi-feudal landlords, upper strata of privileged tenants, bigger ryots, moneylenders and merchants and various other categories of substantial owners; and

(iii) the persistence of the numerical weight of petty peasant proprietors who contribute the bulk of the labour force needed for the agriculture.

Yet another crucial factor which needs to be kept in mind is the colossal investment gone into the creation of a massive infra-structure to boost up farm output ever since Independence. This very impressive infra-structure, which served as harbinger of the Green Revolution in the country. was hopefully designed to lead to the "trickle down" which, alas never took place.

How and why so? Surely, the agrarian structure, as it is, has everything to do with it. This tragic phenomenon is best explained in the words of President Julius K. Nyerere.

In his memorable address at the Rome Conference (July 1979), President Julius K. Nyerere said, "Until now we have in general been trying to tackle the problem of poverty by directing resources into the existing system and hoping that it will *trickle down* to the poor...... But the major benefit of the new investment stays where it began, with the man who already has, and in proportion to the wealth which he already has".—

And as we enter* 1983, *YOJANA wishes its readers good health.

CHIEF EDITOR.

The imposition would be a will of the wisp

"I am not in favour of imposing a direct tax on agricultural income on a nation-wide basis or state basis as an instrument for mobilising financial resources from the agricultural section. If the relevant circumstances change, the opinion can also change. But in the current context of the Indian polity and economy, trying to impose an agricultural income-tax would be a will of the wisp", says the author.

V. K. R. V. Rao, Former Member, Planning Commission, Govt. of India.

I CAN UNDERSTAND THE 'YOJANA' opening its columns for a debate on tax or no tax on agriculture incomes. The *Yojana* is the official journal of the Planning Commission; and the Planning Commission is deeply worried by the failure of State Governments to mobilise the financial resources on the basis of which the Commission had finalised their outlays for the Sixth Plan period. Agricultural income is in the State list but it hardly figures in the State budgets except for the tax imposed on plantation incomes. So why not tax agricultural incomes and make up their shortfall in Plan Resources? It certainly is an attractive prospect and sounds like the desired answer to a maiden's prayer.

The trouble is that it is not so simple. The maiden has been waiting now for some thirty years and her prayer still remains unanswered. The Brahmin Pandit who had been called in with some other learned colleagues did make an attempt to persuade the bridegroom by involving some implementable shastric injunctions, but to no avail. The Raj Committee's Report rested on State Government shelves, while academics discussed its provision and recommended acceptance with or without some modifications. Their opinion did not move the bridegroom either. Meanwhile the maiden is growing older and becoming an unattractive spinster. Time is certainly not on the side of a tax on agricultural incomes.

A close look at the problem

Let us now look at the subject a little more closely. It is true that agricultural income constitutes even today about 35 to 40 per cent of the national income and it would certainly be absurd if it made no contribution to public revenues. But agricultural income is already paying a considerable sum to both the Central and State Exchequers by way of excise duties and sale-taxes, besides taxes on transport communications and entertainment. And this is true not only of the well-to-do of the recipients of agricultural income but also of the many poor among them. In fact, there is no income earner in India, whether agricultural or non-agricultural, who does not part with some part of his income by way of either Central or State or Local taxation. Only the tax is not direct.

So when we talk of taxing agricultural incomes, we are thinking of a direct tax, assessed on individual recipients of agricultural income on the lines on which the Indian income tax is levied on individual recipients of non-agricultural income. Even in the case of non-agricultural income, the bulk of the tax paid comes from indirect taxes and not from the income-tax levied on individual recipients of non-agricultural income. The personal income-tax accounts for a total number of 16,37,919 individual assessees or only 3.72 per cent of the urban work force; and the tax levied accounts for only 0.83 per cent of non-agricultural income. We must therefore have a sense of proportion when we talk of levying a direct tax on agricultural incomes and entertainment. And this is true not only of the hungry exchequers of State Governments.

A colossal effort and meagre contribution

The current level of income legally exempt from the Indian Income-tax is Rs. 15,000 a year; and this is not gross but net income. When permissible deductions like the standard deduction, savings, investments in approved equities or securities and other deductions are taken into account, an individual recipient of a net non-agricultural income of even Rs. 25,000 a year pays by way of income-tax a sum of only Rs. 695. In fact, the bulk of the income-tax on individual non-agricultural income comes from assessees with individual incomes of more than Rs. 30,000 a year. It is true that there are many millions of recipients of agricultural income in the country; but how many of them have an annual net income of Rs. 15,000 a year, let alone Rs. 25,000? Even assuming that the political and administrative difficulties in the way of introducing an effective income-tax on agricultural incomes can be overcome, it is very important to consider the financial returns from such a tax and balance it against the magnitude of the effort involved in getting what would at best be a meagre contribution to the Exchequer.

The administrative and political effort involved in introducing an agricultural income-tax on a national scale on the lines of the current income-tax on non-agricultural incomes is truly colossal, especially in the current context of Indian politics, administrative deterioration, growth of farm lobbies, and increasing power of the rural elite. Even in the most developed countries, where agriculture is a large scale and organised business, it is difficult to apply the accounting procedures involved in determining the cost of production and assess the net income from agriculture.

In a country like ours, where agriculture is almost wholly an unincorporated activity (except for some plantations) and is largely an individual business, where family labour and owned capital, including land, play such an important role in the generation of income, where the problem of depreciation and capital replacement are more intractable, and here there is such a large fluctuation in annual income and lack of monthly periodicity in receipts and where production, transport and marketing of output are so integrally mixed up, it is very difficult to plan an agricultural income-tax comparable to the income-tax on non-agriculture either in terms of netting or regularity or depreciation and replacement or fortuitous or planned losses. That is why proposals for a tax on agricultural income are usually for an indirect form, either on land holdings by size and deemed fertility or average output or by commercial and profitable crops, and in effect constitute indirect taxes with their incidence problems, unlike a direct tax that rests on the tax payer, at least in theory.

Even if a direct tax is imposed, unless the exemption limit is lowered and concessional deductions diminished and direct accounting is replaced by some sort of a rough and ready average with discretionary provisions for deviations from the average, it cannot work. Even if it does, the administrative work involved over the large area covered by rural India, the harassments it will stimulate and the corruption it will induce will not be worth the meagre financial return it will net, though it may add to legal practice and possibly provide some addition to the receipts from the income-tax on non-agricultural income.

And the political implications

Politically, the task of imposing a direct tax on agricultural income would run into even more severe difficulties. Farmers in India are getting organised; and the fact that the small and marginal or even medium farmers would not be affected by such a tax, would not prevent them from ganging up with the better-off farmers, for farmers in India are developing into a class, conscious of their separate identity and beginning to enjoy the feeling of political strength that their members and strategic position in the economy gives them. Farmers are also becoming wise to the techniques of industrial conflict and adding new items to the armoury built by the urban working class. No political party, neither the ruling parties nor those in opposition, wants to get on the wrong side of the agricultural producers; and even the leftist parties are showing friendly concern for the complaints of the large and medium farmers, whom earlier they had denounced as the kulak class. Farmers are not getting split into conflicting classes on the basis of their size of holdings and the marketable surpluses that give the largest benefit from rising prices. The farm lobby is becoming a powerful political force and likely to grow into greater strength in the future.

In addition, the agricultural producer is today suffering from a genuine grievance. The terms of trade are turning against him and his input costs are rising faster than output. The Green revolution with its dependence on energy and urban manufactured inputs has exposed him to new vulnerabilities and price fixing by Government gives him an easy and identifiable target for his agitational activity. The national importance of increasing agricultural output is being constantly dinned into his ears; and one can understand the Indian farmer feeling sore at what he thinks is the step-motherly treatment he is getting in not getting all the concessions he feels entitled to by virtue of the recognised national role he is playing for the economic growth of the country.

Market economics and cost-price-profit ratios are ceasing to have any relevance in regard to inputs like water, energy and credit provided by the State or a State agency; and public investment in agriculture is not getting commercial returns for Government or funds for recycling into fresh investment, even though they may have their justification in social-cost benefit theories and balance of payment considerations. Our economics is much too mixed up with politics and populism, and it would be a Herculean task to put across the farming population the rationale of a direct tax on agricultural income.

The alternative is there

If at all we are serious about raising more funds from the agricultural sector, it is irrigation rates that need to be nationalised, betterment levies that need to be collected and credit advances that need to be repaid. These sources of mobilisable finance, whatever they may be called taxes, fees, rates or prices or repayments are in some sense large reservoirs of what may be termed as un-utilised capacity in an existing set of fiscal instruments for resource mobilisation. They have a working administrative machinery and a rationale that is well understood or can be propagated in terms of social justice visibly and conspicuously linked with differential advantages and returns, whether from publicity financed investment in irrigation or power or more credit.

All farmers do not get water or energy or credit; but some of them are, and among them are many who did not get it before and did not put in any significant

(Continued on page 8)

Equity demands mopping up surpluses

"THE CASE FOR taxation of agricultural income on grounds of equity would still be quite strong, even though the net revenue mobilization may not be significant, particularly in areas where Green Revolution has made a significant impact. In such areas the increased agricultural surpluses are not entirely invested in productive assets. A good part of such surpluses is frittered away in conspicuous consumption. It is, therefore, necessary to mop up part of these surpluses by the Government through taxation," says the author.

C. H. Hanumantha Rao, Member, Planning Commission, Government of India.

DESPITE THE CEILING ON the ownership of agricultural land, there will be a large number of farmers, especially in the irrigated pockets where Green Revolution has made an impact, whose incomes exceed Rs. 15,000 per annum. Whereas the corresponding income groups in the non-agricultural sector are required to pay income tax, the rural income groups pay direct taxes at present in the form of land revenue which constitutes only about 1 per cent of their farm business income. Considerations of equity demand that these agricultural income groups are taxed broadly on par with their urban counterparts.

It may be argued that agricultural income tax is not likely to serve as an efficient instrument for this purpose in view of the difficulty of obtaining adequate accounts on farm incomes and expenses and the real possibility of tax evasion by the more influential cultivators through the understatement of output and overstatement of costs. What is worse, there is the possibility of harassment of the less influential and the genuinely poor cultivators at the hands of petty officials. This is a paradox of an admittedly ever progressive tax measure becoming regressive in operation owing to administrative and other difficulties. Therefore, in the context of underdevelopment (economic as well as administrative), taxes to be revenue-yielding and equitable should also be simple to administer.

The Raj Committee Findings

These considerations led the Committee headed by K. N. Raj on Taxation of Agricultural Wealth and Income to reject agricultural income tax as an alternative to land revenue. The Committee also brought to focus the basic reason why the existing land revenue rates cannot be made an instrument for progressive taxation of income in agriculture on an equitable basis. The incidence of land revenue in relation to farm income varies significantly between different regions of the country and between different tracts even within the same agro-climatically homogeneous zones. It would, therefore, be difficult to impose surcharges on land revenue that are equitable without ascertaining for each agriculturally homogenous zone in the country the proportion that land revenue bears to the farm business income. Such operations would be very costly and time-consuming.

In any case, if farm business incomes can be ascertained for such agro-climatic zones, land revenue becomes redundant as an instrument because the tax can now be assessed directly with respect to the presumed income of the holding itself. The Agricultural Holding Tax (AHT) recommended by the Raj Committee amounts precisely to this.

The taxation case is quite strong

Increased taxation of agriculture has been advocated throughout the planning period in India mainly as a means for the mobilization of resources for development. However, the case for taxation of agriculture on par with similar levels of income in urban areas rests not so much on grounds of revenue as on considerations of equity and other economic effects. If land revenue is to be replaced by agricultural income-tax, it is quite possible that several State Governments may not find it attractive in terms of revenue mobilization. But "the case for taxation of agricultural income on grounds of equity would still be quite strong, even though the net revenue mobilization may not be significant, particularly in areas where Green Revolution has made a significant impact. In such areas the increased agricultural surpluses are not entirely invested in productive assets

A good part of such surpluses is frittered away in conspicuous consumption. It is, therefore, necessary to mop up part of these surpluses by the Government through taxation. It should also be necessary to mobilise savings on a voluntary basis into agro-industries through the introduction of viable schemes in such areas.

Equally important is the question of efficiency of land-use and investment in land as an asset. Land as a tax-free source of income is likely to be less intensively utilised than as a source of taxable income. Progressive taxation of agricultural land has often been advocated by economists with a view to inducing more efficient use of land.

Land is generally regarded as an attractive source of investment, particularly as a hedge against inflation, because land values rise generally in sympathy with and often more than proportionately to the rise in the general price level. Because of this steep rise in land values, the poorer sections including small and marginal farmers are priced out of the land market. Even State Governments have been finding it difficult to acquire land for public purposes and for anti-poverty programmes because of the high compensation that needs to be paid keeping in view the market prices of land. Progressive taxation of agricultural land or agricultural incomes can be expected to bring down the land values as the expected net income from land would be lower by the extent of taxation when compared to the tax-free situation. Such a taxation would also help mop up for the exchequer a part of the unearned incomes or capital gains from land.

Cess on Value of marketed produce

Taxation of agricultural income or a graded progressive tax on land holdings can be supplemented by a cess on the value of marketed agricultural produce. With the modernization of agriculture and the progress of Green Revolution, an increasing proportion of agricultural produce is being marketed and the proportion of output marketed increases steeply with a rise in the size of holdings. Therefore, the incidence of a cess on the sale value of marketed surplus would be progressive in nature. The incidence on the small and marginal farmers would be negligible, as they sell a very small part of their output. It may also be desirable to exempt small quantities of produce marketed from such a cess so that small and marginal farmers are completely exempted from such taxation.

The levy of a cess on the sale of agricultural produce is being contemplated in some states. Such a levy, when it comes into force, would be a welcome breakthrough for resource mobilization from agriculture and also from the point of view of equity. Such a cess is unlikely to be passed on the consumers because the prices of foodgrains, e.g., wheat and rice, are fixed by the Government on the basis of the recommendations of the Agricultural Price Commission, which need not take into account the cess levied on the sale value of produce as an element of cost in fixing the prices, then it would amount to a redistribution of resources from the Central to the State Government and would not make any difference to the overall resources of the Government, because what is collected through the cess from the farmers is paid back to them in the form of higher prices. □

(Continued from page 6)

effort of their own for getting it. It is the general tax-payer who pays for the losses incurred by public investment in either irrigation or energy ; and it is the general saver or investor who will have to pay for the non-repayment of credit advances on a large scale or a consequent non-replenishment of funds for recyclation. It should not be impossible to educate the nation in these matters so relevant to their own economic well-being of a sustainable character and their economic growth in the future.

Let's mobilise resources before adding

We are all agreed on the need for full utilisation of installed capacity in the field of production. But when we find difficulties in doing so, we resort to additions to capacity. Let us not repeat the same mistake in the field of mobilising financial resources for development. Let us use the existing instruments for resources mobilisation to their optimal point before adding new instruments. This applies with special force to the field for mobilisation of additional resources from the agricultural sector.

It is not necessary to add that "I am not in favour of imposing a direct tax on agricultural income on a nation-wide basis or state basis as an instrument for mobilising financial resources from the agricultural sector. If the relevant circumstances change, the opinion can also change. But in the current context of the Indian policy and economy, trying to impose an agricultural income-tax would be a will of the wisp, and that too for meagre returns and in the presence of alternative means for better returns. □

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Vinoba and the Bhoodan Movement

A GREAT SAINT, a courageous reformer and an inveterate crusader against economic injustice, social oppression and caste and communal prejudices, Acharya Vinoba Bhave passed away recently. He strived ceaselessly to introduce the law of love in our social and economic life. Dr. R.R. Diwakar, one of the last few Gandhians, who is fortunately amidst us, in this exclusive article discusses on the Bhoodan Movement, launched by Acharyajee. He says that while the people were educated about all that Vinoba preached, it had its own effect on the rulers also and there is today land reforms legislation in every State, especially as regards land to the tiller, ceiling on holdings, distribution of surplus to the landless especially the scheduled castes and tribes and so on. All this owes not a little to the wave of the "Bhoodan Movement".

R. R. Diwakar

VINOBA AS WELL AS THE BHOODAN MOVEMENT have to be seen in a certain perspective if we want to understand it fully. Its significance and implications are many more than its passing effects as a mass movement by a saint of great magnitude. Retrospectiely speaking, Vinoba's comment on Bhoodan, when questioned if the 'land-begging' movement could solve the land-problem of India, is very important. He said, it is not merely *'Dan'* a petronising gift, I am asking for, it is *'Daya-Bhaga'* a share. It was a Saints' way of putting things. While *'Dan'* is a gift by the giver, *'Share'* is a legitimate claim by a blood-brother or a partner ! Later in the movement, this meaning began to unfold itself when Vinoba did not stop at 'Bhoodan' but went on adding, *Sampattidan, Jeevandan, Gramdan* ending with his idea of Gram Swaraj—Village Republic. This earned him the title of *'Danacharya'* and Sarvodaya Leader.

To recall a Pauranic story, Vaman, a pigmy Brahmin went to Bali, the Lord of the earth to ask for a piece of land covering only his own three steps. But the Tiny Beggar ended by pushing down the tyrant Bali to Patala the nether world and throwing open the world to the people for self-rule ;

To hark back to Bhoodan and to Vinoba, when the movement was at its peak, the Acharya invited all the political parties, including the communists in India, to a conference at Yelwal, a village near Mysore city in Karnatak. All the parties promised full support to the movement and offered to help by marginal legislation which might be necessary for Bhoodan, and later even for Gramdan.

Hour of God for Vinoba

The Land-problem along with it the ownership of property by individuals or groups in human society, is the fundamental problem or say, the problem of problems in Socio-economic relations. Vinoba was quite aware of it. He knew that the Scheduled Castes were most landless and the landless village labourer was the last in the scale of the Deprived of the Earth, While touring Telangana in 1951 which had become prone to violence on account of communistic activists, it struck him one day to try to secure some land for the landless in Andhra. But being soaked in Truth and Non-violence of the Gandhian Brand, he suddenly thought of appealing to an audience at Pochampalli village 'to beg' for 'land for the landless'. A large-hearted land-owner came forward with a gift of hundred acres; That was the Hour of God for Vinoba. He could realise that God's Grace could strike a springful of water in the rociest of soils and could moisten the driest of souls.

That was the beginning of the Bhoodan Movement which snowballed and swelled to the gift of 42,00,000 lakhs of acres. Once when Vinobaji was in Bihar and was gracious enough to visit the Raj Bhavan at the time that I was Governor of that great State. I inquired about the quality of the land he was getting in DAN. He told me frankly that one-third was good land, one-third was arable, and one-third was unusable waste ;

One of the most ambitious saints that Acharya Vinoba was he could not stop at Bhoodan and tripped off to Gramdan after starting distribution of DAN land to the landless in the respective villages. I do not want to say anything about his Gramdan and Gram-swaraj movements here. I may however, reflect on the land problem, the distribution of DAN land and the total significance of the Bhoodan movement.

Today one could say that almost all the gifted land has been distributed except where legal title and such other obstructions have come in the way.

Concept of Bhoodan

The concept of Bhoodan was born in the heart of a saint aching at the suffering and mistry of the landless and at the same time, while the landless believed that land would solve their problem. The saint could not but try to solve the problem in the only way he could do it, hedged in as he was by his own inhibitions against violence and even against hatred as well as harsh words and unkind sentiments against the worst land-grabbers. But Truth is harsher. The Truth is, Sab Bhoom Gopalki, all land belongs to God (not to the King or governments) and it ought to be distributed equitably, if not equally among the sons of the soil. Vinoba was fully aware of this Truth and sometimes repeated it. Why then should there be 'a man in need of land' and 'a man with surplus', to give? This Truth exposes the very unjust economic structure of today's socio-economic systems prevalent throughout the world. And neither spiritual seekers nor religious people have tackled this matter at its root. Vinoba in a very mild way, in a gentle language, in a saintly style said to the richer brother, 'give some land to the landless. Please share it with your less fortunate brother'. In a certain context, the appeal went home and all the world applauded it; but indirectly Bhoodan only sanctions the status quo, the privilege of land-grabbing (and wealth-grabbing too). 'Part with a penny to retain the Pound' and in the bargain be hailed as a philanthrope! Vinoba as one of the shrewdest of saints knew this, therefore he did not want to stop at Bhoodan, but went ahead with Gramdan and Gramswaraj and there met his last post.

Greatest Merit

The greatest merit however of the movement and the fruitful fourteen years of the cross-country Padyatra by a great patriot-saint, a true philosopher, a scholar of unknown dimensions, synthesiser, and believer in Lok-shakti, advocate of real Satyagraha is not lost either on India or on the world. And that was the awakening of the people to the fact that land and property have to be shared by all, if all have to enjoy and live life in peace and happiness. The by-products of the Movement were far greater, since the irrigation of all the ideas, principles, thoughts which Vinoba stood for reached all the homes and hearts of millions who eagerly waited on the saint-in-action for the poor and the forsaken.

The West Bengal Government however, said, that kind of paltry gifts to landless people by 'landful' owners went against the principle of 'economic holdings'. The land-owning class began to prefer those who remained landless for hiring labour to those who got some land-gift. Thus there was a disadvantage to them, since they had not land enough to maintain themselves and had to depend on labour-hire meted out them by land-owners.

While the people were educated about all that Vinoba preached, it had its own effect on the rulers also and there is today land-reform legislation in every State, especially as regards, land to the tiller, ceiling on holdings, distribution of surplus to the landless especially the Scheduled Castes and tribes and so on. All this owes not a little. to the wave of the Bhoodan Movement.

S.B. Chavan on Vinoba Bhave

The 'Bhoodan Movement' of Acharyaji is potentially revolutionary in Character. It is built on an act of faith and though it may not have brought about an agrarian revolution, it did prepare a climate of opinion in which courageous methods of land reforms could be put through.

S.B. Chavan

P.M. on Vinoba Bhave

"He led the 'Bhoodan Movement', which at a critical period in our national history helped to turn the country-side away from violence and created an atmosphere of cooperation. His insistence that humankind's survival demanded a combination of spiritualism and science made a profound impression on all who met him and is a message very relevant to the crisis of our times.

Indira Gandhi"

Caste System

It is the height of stupidity to think of any caste as being superior or inferior. Our social life can make no progress unless we abolish the silly distinctions of caste. They have weakened us. The bane of the caste system must go.

—Acharya Vinoba Bhave

Moving the mountains

Love is more powerful than hatred. Harmony is more natural. Spirit can move mountains.

—Acharya Vinoba Bhave

Management information system for rural development

Management Information System is a process through which the monitor gets proper feedback from appropriate levels at reasonable lags which enable him to take immediate corrective steps to plug the loopholes and minimise the leakages from the scheme. It also provides him with information regarding the impact of the scheme on important variables which could be analysed and put before the policy-makers for introduction of changes in the policy relating to that particular scheme by keeping the overall national objectives in view. It is most appropriate that this system has been introduced in the Command Area Development Division of the Ministry of Irrigation in the 'year of productivity'.

R. S. Saksena and Damodar Tripathy

IN INDIAN FEDERAL SYSTEM, the Centrally Sponsored Rural Development Programmes are formulated at the Union level under the broad frame work of national policy objective and are implemented by the State Governments and Union Territories through normal department channels with assistance, mostly on a matching basis, from the Centre. For such programmes, guidelines are prepared by the Union and sent to the States. The central ministries| departments concerned monitor the programme by

(a) Calling periodic information in prescribed proformae and written communication in case of shortfalls in achievements in relation to the fixed targets;

(b) visits of the officers of the Centre to the projects or programme areas and guidance given to the implementing agencies either on the spot or through tour notes, and

(c) discussion in national and regional seminars, symposia and conferences etc.

Very often, the proformae developed by various agencies under (a) concentrate more on physical and financial progress of the schemes without much information which would help the monitoring authorities to understand the principal factors leading to lower (or higher) achievements in relation to assets. These also do not provide adequate feed back to the central monitor to take immediate corrective measures. The reporting may also not be adequate to evaluate the impact of the scheme or programme on important variables like output, employment and income distribution.

Management Information System (MIS) is a process through which the monitor gets proper feedback from appropriate levels at reasonable lags which enables him to take immediate corrective steps to plug the loopholes and minimise the leakages from the scheme. It also provides him with information regarding the impact of the scheme on important variables which could be analysed and put before the policy makers for introduction of changes in the policy relating to that particular scheme by keeping the overall national objective in view.

One of the Sub-Groups on MIS in Government contends that the principal objective of MIS are to :—

(a) "Focus attention on key areas and provide information relevant for decision making at each level. In this process, it has also been possible to considerably reduce the number of reports which were being submitted to the Ministries;

(b) provide system of timely warnings of likely slippages and bottlenecks so that corrective action can be taken in time; and

(c) Forecast more precisely the expenditure in relation to budget provision."

Attainment of the above objectives requires a few decisions to be taken about the characteristic of the system. The principal factors which need consideration in this connection are (a) the organisational set up (b) periodically of the receipt of information (c) Development of format for collection of information (d) Format for collation, analysis and storage and (e) system monitoring.

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*The views expressed in this paper are entirely these of the authors and not necessarily of the organisation in which they work.

Organisational set up

A good MIS requires collection, compilation and analysis of data and information at each decision making level. But the cost of maintaining such a systems may be very high in relation to the investment to be made in the programme or scheme. Further more, the type of personnel required at each level may be in short supply thereby restricting the choice. to begin with, to fewer levels than required.

The process of implementation of any centrally sponsored rural development programme or scheme involves at least three levels, the Centre, the State and the project. Certain programmes may involve one more level like a region. For efficient functioning of the system it may be necessary to have at least a three tier system. Central, State and the project. While the former two levels will collect and analyse the data for monitoring purposes, the latter will collect the data in the prescribed format and supply to the higher levels. This does not mean that at the project level there will be no monitoring. For the process of data collection itself serves as monitoring within the project. The executing officer at the project level will get the feedback and try reallocate resources at his level for better results.

A two tier system, one at the Centre and the other at the State level, will be necessary to begin with. As experience grows, it may be possible to extend the system to the project level.

Periodically

Once the decision is taken about the levels at which the data and information are to be collected and analysed, the next step will be to fix the periodicity of information arrival—monthly, quarterly, biannual or a combination of them. Though it will be desirable to have the information at quick intervals the periodicity has to be decided with due consideration to the organisation available for collection of such data, the cost involved and the capability to analyse them speadily for taking remedial measures. Quite often it is seen that data collected at a considerable cost are not used or not analysed properly nor quickly. To avoid wastage of scarce resources, "One may consider having quarterly reports instead of monthly ones". But for overall impact analysis of a programme or scheme, an annual report will be highly desirable in addition to the quarterly ones.

Data Input Format

Any programme or scheme has got two major targets which when achieved are expected to yield benefits for fulfilling certain objectives. These targets are Physical and Financial.

Physical progress needs to be reported itemwise, each item in a separate sheet. Financial progress should be shown in one sheet for different items as per the financial pattern of the scheme viz. shared (by Centle) items, State|UT items and institutional finance etc. For an overall view of the progress on physical and financial front a format called summary of progress should precede the progress report set.

Quite often wide divergences are seen in use of units in reporting inspite of clear guidelines from the Centre or State. For example constitution, field channels is to be reported in hectares of area covered but sometimes data are given in terms of kilometres. Conversion rate is likely to differ from State to State and from project to project. One kilometre of field channels may cover 20 hectares in a State, while in some other State it may cater to the needs of more or less areas. Furthermore, care should be taken to see that unit column is never kept blank.

Each proforma should be given an identification number. Progress in a particular period should be related to the target for that period. There should be two columns reporting the annual target and cumulative achievements upto the end of the quarter in question respectively. To know the programme of work for the next quarter the expected achievement should be given in a separate column. The short fall in achievements during a particular quarter should invariably be explained in the remarks column.

Correct assessment of the situation obtaining in the project depends, to a great extent, on the correctness of the primary data reporting. It is imperative that those who report data should understand clearly the implications of various rows and columns in different formats. Each data form therefore should have explanatory notes attached to it.

Some additional format will have to be developed for the annual reporting in addition to data in the proforma for the last quarter. This format should have preferably three sections ;

(i) Basic data regarding the projects ;
(ii) Overall progress and perspective target, and
(iii) Project impact.

Section (i) will include items relating to general plan objectives of the project. For example if the scheme is related to irrigation command area development, the section will have, in addition to the basic data like data of inception of the project. gross command area, cultivable command area, ultimate irrigation potential, irrigation intensity with details of the area irrigated seasonwise, cropping intensity, infrastructure development, credit aspects etc. Section (ii), while reviewing the programme under various items of work, will also specify the perspective target date of completion (or complete coverage) as contemplated in the original scheme and the perspective date that is anticipated now on the basis of available data. This section may have two sub-sections. While the first subsection will deal with physical progress, the second will deal with the financial aspects.

Project impact has to be examined in relation to the objectives of the schemes or programmes. Since a large number of schemes under various programmes have built-in preference for the target groups or people below the poverty line, the impact format should clearly have columns for each such group in particular. Further more, the impact has to be studied in relation to the inputs (including extension) used (or provided) for the programme. Input use being a function of infrastructure, an appropriate sub-section may be introduced to catch the links (or mislinks) influencing the input use.

Format for compilation and analysis

Developing countries, in general, use only a very small proportion of the data collected at a very high cost. In a large number of cases after analysis of a small portion of the data are done the original data are wasted due to lack of storage facilities. Utilisation of collected data pre-supposes the following : (i) Adequate number of skilled personnel (ii) proper data analysis format and (iii) proper data processing equipments. A large number of data processing equipments are available in the market. A competent organisation with trained man power can always choose the right type of equipment necessary for the purpose, provided, there is no administrative or financial constraints.

Development of a format for analysis of data received from the States and Projects in various quarterly and annual reports forms the core of the MIS. A small change in the format by an expert may accommodate a lot of data and information and bring out clearly the lacunae in the system. This format should be such that for each item under the scheme there is a separate proforma having adequate number of columns and rows presenting data in a manner by which a mere observation of them will provide sufficient idea regarding the progress, prospect and lacunae in the system. The content of the proforma is likely to vary as between programmes or schemes. The main idea is that the format should be simple to understand thereby making the interpretation easy.

Since useful data and information are to be received in varius formats steps should be taken to store them in a system from which recalling the data and information will take minimum possible time. For pilot programmes the information may be kept in different registers. However, for bigger programmes it may be necessary to store data in a computer system.

System Monitoring

To evaluate the working of the system there should be a MIS Cell at the Centre with personnel from various disciplines having field experience. They should also have adequate knowledge in evaluation methodology and system monitoring. Counterpart organisations have to be at the State and Union Territory level. It should be ensured that all the posts of the respective Cells are filled up in the quickest possible time.

Continued monitoring of the system with periodic evaluation is of prime importance under any Management Information System. While the general monitoring could be done by the middle level officers engaged in the programme, higher level officers have to be involved if the programme or scheme get constrained at a particular level requiring a major policy decision. Specifically the head of the division and the Ministry have got to be involved in annual evaluation and over view of the programme.

The system is developed to reduce unnecessary data reporting to the minimum. It also does not allow for large changes in the formats during a particular year. But at the end of the year after the review of the programme is done, the Central monitoring cell can invite suggestions from the States and projects for changes to be introduced in the formats. Such suggestions could be discussed at a joint meeting of the Centre, State and project officials and appropriate changes introduced in the proformae.

Experience in the working of such systems will help in the development of better systems in future. We will gain experience provided we introduce and operate such systems. Introduction of the Management Information System in the Command Area Development Division of the Ministry of Irrigation in the 'Productivity Year' is a right step in this direction. □

Narmada development should be national responsibility.

THE seminar on 'Development of Narmada Valley' organised by the Madhya Pradesh Government as part of the Weeklong Madhya Pradesh Utsava 82 was inaugurated at New Delhi recently by the Union Planning Minister, Shri S. B. Chavan.

Chief Minister Shri Arjun Singh welcoming the Union Planning Minister, observed that the Seminar had thrown up the relevant question as to why it was necessary to organise it in view of the fact that most of the information about the development of Narmada Valley which would be analysed and discussed in the seminar was already known. Answering this question, the Chief Minister said that the seminar's justification would be in establishing that the development of Narmada Valley involving over Rs. 3000 crore should be a national responsibility and not the responsibility of Madhya Pradesh alone. On the implementation of the 29 major, 135 medium and over 3000 minor irrigation schemes of the Narmada Valley Project, Shri Arjun Singh said that not only the State but the nation would benefit by the addition of 3 million hectares of irrigation potential and 2600 MW of additional generation of power.

Protection against sea-erosion in Kerala

THE Central Government has provided a loan assistance of Rs. 25.46 crores upto 1981-82 to Kerala for anti-sea-erosion works. The State Government has protected 253 kilometres upto March 1981 out of 320 kilometres of vulnerable coastline with an expenditure of Rs. 49.79 crores. The State Government has planned to reconstruct 18 kilometres of existing sea wall. The problem of sea erosion, though experienced in varying degrees along the coastline of India, is quite severe on the Kerala coast.

Welfare of children in a welfare state

CHILD IS THE FATHER of man. The quality of an individual adult depends to a large extent on the opportunities he has to develop and grow as a child. The investment in child development through its impact on the quality of the work-force of the next generation has a vital bearing on the advancement of a nation. The author while discussing the priorities accorded by the Government to the Integrated Child Development Scheme (ICDS) and the Special Nutrition Programme (SNP) has suggested a bold initiative outside the Sixth Plan. He says that it could be to begin with, in regard to a selected single aspect that has the maximum bearing on a child welfare.

Arvind Bhandari

CHILD, SAID ROGER BACON, is the father of man. What he obviously meant was that the quality of an individual adult depends to a large extent on the opportunities he has to develop and grow as a child. This means that investment in child development, through its impact on the quality of the work force of the next generation, has a vital bearing on the advancement of a nation. Undoubtedly, the right of children to priority attention on this economic ground is further reinforced by the sheer humanitarian aspect of the question.

Another Children's Day has come and gone to the accompaniment of the usual torrent of ritualistic rhetoric. What is needed is a hard-headed look at the situation pertaining to children. The sombre statistics bear repetition, as a reminder of the magnitude of the problem. Of the 255 million children below 14, nearly 90 per cent suffer from malnutrition, about 1,00,000 succumbing to it every month. India's infant mortality rate of 125 per 1000 is among the highest in the world. Over 30,000 children go blind every year because of Vitamin A deficiency. Nine out of every 1000 school going children suffer from rheumatic heart disease as a result of nutritional anaemia.

The situation regarding children is undeniably an off-shoot of the general problem of poverty. But this cannot be regarded as a justification for abdication of the specific responsibility towards children. Much can be done to ameliorate their condition through special schemes conceived on a meaningful scale. That this is not sufficiently appreciated is evident from the present exercises in tokenism.

Following the adoption of the National Policy for Children in August 1974, an Integrated Child Development Scheme (ICDS) was launched in 1975-76 with 33 projects in which a package of services—supplementary nutrition, immunisation, health services and non-formal education—was to be provided. Now there are 300 projects. The Sixth Plan target has been, under the impetus of the 20-point programme, increased from 600 to 1000 projects. Even this enhanced target envisages supplementary nutrition for only six million children. Another eight million children are planned to be fed under the Special Nutrition Programme (as a part of the Minimum Needs Programme). The two schemes together thus barely touch the fringe of the problem.

Nutrition, vital for Child Welfare

Even if the Government were to re-order its priorities, expansion of the ICDS and the SNP so as to cover a large proportion of the poverty stricken children in the country is, given the competing claims on the Sixth Plan resources, virtually impossible. What is needed, therefore, is a bold initiative outside the Plan. It could be, to begin with, in regard to a selected single aspect that has the maximum bearing on child welfare. The choice obviously falls on nutrition. The Tamil Nadu Government has given a lead that is worthy of emulation.

Taking a cue from the idea experimented with rudimentarily by the late Shri Kamaraj, Shri M. G. Ramachandran's Government launched on July 1, a scheme to provide mid-day meals to poor school children in the rural areas. On September 15 the scheme was expanded to cover school-going children of urban slums. It is proposed to feed 6.6 million children in the 4—14 age-group. Each child is given 100 grammes of rice, 15 grammes of dal and 50 grammes of vegetables. The food articles are supplied by the civil supplies and cooperative departments.

A study conducted by the Gandhigram Rural Institute shows that the scheme has been well-received. The children look smarter and the attendance in schools has improved. It is claimed that the enrolment increased by 1.64 lakh in the July—September period.

Further, nearly 1.50 lakh people, mostly rural widows, have found jobs as cooks and helpers.

Mid-day Meal Scheme in T.N.

A gigantic experiment is bound to have teething troubles. Most of the 33,000 village schools in Tamil Nadu have one teacher who has to double as a feeding centre supervisor. The additional strain has adversely affected teaching. It is, however, a matter of debate what affects the educational process more adversely, a classroom full of hungry children or the imposition of an additional duty on a teacher. Anyhow, two teachers' organisation have announced their intention to dissociate themselves from the scheme from the beginning of next year. The State Government has agreed to relieve government teachers from their additional duty but not clarified who will fill the breach. Some sceptics have spoken about free meals creating a psychology of dependence among children. Such hoary notions, apart from being debatable, add up to a thin argument in the face of the misery experienced by semi-starved children. Corruption will of course have to be guarded against, especially because the beneficiaries of the scheme are too young to protect their interests.

Th future of the scheme rests in no small measure on the successful tackling of its financial implications. The State Government is meeting the entire cost of a meal, which is placed at 45 paise. On this basis, it was estimated that the per annum additional burden on the state exchequer would be Rs. 100 crore, but it now seems that the figure may now rise to Rs. 120 crore. Some voluntary donations have been forthcoming but these obviously cannot meet the entire bill. Nor can the State approach the Centre for it is a non-plan scheme. Therefore, the money will have to be found by tapping fresh avenues. One such avenue could be a widely publicised special raffle.

Tamil Nadu has also sought UNICEF assistance for the scheme. India has been a major beneficiary of UNICEF assistance, which amounted to Rs. 115 crore in the period 1949—80. The amount earmarked for 1981—83 is Rs. 124 crore.

Following the example of Tamil Nadu, Andhra Pradesh announced the introduction of a similar scheme from November 14 (Children's Day). The scheme has also aroused the interest of the Centre and Gujarat, Karnataka, Bihar, Rajasthan and Madhya Pradesh.

Immunisation

Another aspect that calls for a vigorous campaign is immunisation. The Sixth Plan has the following targets for immunisation of children : polio 15 million, BCG 75 million and typhoid 56 million. Not only are these targets much below what is required, even these are unlikely to met, if the present lackadaisical performance is any indication. This just will not do.

Child labour, child under-trials, child adoption and child beggars are some other aspects that compel attention. Over 16 million children work in India, comprising 5 per cent of the work force. Most of them are exploited. Hundreds of children continue to be incarcerated. What is needed is a uniform Children's Act in the States, instead of different laws or none at all. Thousand of children are kidnapped every year, maimed and forced into beggary. The number of children reported missing in the national capital, Delhi rose from 5007 in 1979 to 7899 in 1980.

Baby Sales

Although the furore over the instances of alleged baby sales in Calcutta has subsided, this does not mean that baby sales do not exist. Only the Hindus have an adoption law called the Hindu Adoptions and Maintenance Act 1956, but this is also unsatisfactory, being hedged with qualifications and conditions. Other communities have no law at all. Also, there is no law on adoption of children by foreigners. The Guardians and Wards Act 1890 provides only for the appointment of a person as a guardian. This confers no rights on the child and the tie is revocable. Thus if a guardian were to choose to withdraw after a couple of years, the child could be left in a state of emotional limbo.

There are innumerable children in our country languishing in orphanages and other institutions. If there were adequate provisions for giving them in adoption to childless couples in India and abroad, these unfortunates could also get love, security and the warmth of a home. Though of late many foreign couples have taken children out of the country for adoption, using the provisions of the Guardians and Wards Act, there is no way to ensure their welfare. The Adoption of Children Bill 1972 has a provision enabling foreigners to take a child out of the country for being adopted under certain circumstances which ensured the best interests of the child. There was a clause providing for deposit of some amount or a bond to enable the child to be repatriated to India should it become necessary. Before final adoption, care and custody was to be given to the foreign couple provisionally. Unfortunately, the bill was consigned to the legislative dung-heap.

The Government should not waste any more time and come out with the necessary legislation. The starting point of a welfare state is the welfare of children. This country can do nothing less. ☐

Project for rural poor women under IRDP

THE prestigious scheme for the Development of Rural Poor Women will be implemented on a pilot basis in 50 backward districts selected on the basis of priority given to the most backward states. Since the scheme is of a innovative nature, a great deal of flexibility will be allowed in its implementation. The scheme would be evolved from the grass-roots instead of having been prepared at the national level as a national directive. The objective and approach of the scheme of Development of Women and Children in Rural Areas (DWCRA) and the modalities of its implementation were discussed at a meeting of the State Secretaries in charge of Rural Development held in New Delhi recently.

Conservation of bio-sphere reserve in India

Wild life reserves in India have traditionally been set up on the basis of areas which have had a significant concentration of wildlife (more often the animal life) or have been scenically beautiful. Little thought was given to the area under consideration being ecologically viable or whether it encompassed the total habitat of the species it contained. Many of the places so demarcated were very small in area and had a number of other grave contradictions that inhibited ecologically sustainable wildlife preservation. The management plan seldom had the concept of zoning. This paper attempts to present the rationale for the planning and selection of areas suitable for biosphere reserves, some principles that should govern long term management programmes, and the policies and implementing mechanisms required by the concerned authorities to make a success of this endeavour regarding Nature Conservation.

K. K. Mahajan

THE CRISIS OF ENVIRONMENTAL degradation which the present world is facing is a direct result of the dichotomy between animate and inanimate life that has plagued the present day civilisation. This, in turn follows from the concept that human being is the supreme creation in this universe, and therefore has the right to exploit anything and everything around him to satisfy his personal needs. The ever increasing needs of the sophisticated fews, coupled with the increasing population at galloping rate, has upset the land use pattern and has created a destructive imbalance in the otherwise self-generating ecosystems.

These rapidly vanishing renewable resource along with the wildlife (plant and animal both) did stir concern in some quarters in the early 50's as a consequence of which a movement for establishing National Parks started in India and some National Parks were created to conserve the fast dwindling wildlife of the country.

Until recently creation of a National Park was thought to be the most effective approach towards wild life conservation. This approach was species oriented and did not pay attention to the habitat aspect. The concept of biosphere reserve was, however, put forth to conserve the areas with rich genetic resources in the wild, along with their habitat. These are the resources, which are vital for the well being of the present and future generations. Conceptually, the biosphere reserves should contain an area which is given maximum protection from human impact and a surrounding buffer zone in which multiple form of land use can be undertaken as long as they are basically conservative and serve to protect the core areas from damage.

Biosphere Reserves

Biosphere Reserve should be large enough to provide a secure habitat for even the most threatened species. The UNESCO MAB Task Force, constituted for clarifying the objectives of biosphere reserves, in their report "Criteria and Guidelines for the choice and establishment of Biosphere Reserves," mentions the objectives as :

(i) To conserve for present and future use, the diversity and integrity of biotic communities of plants and animals within natural ecosystems and to safeguard the genetic diversity of species on which their continuing evolution depends.

(ii) To provide areas for ecological and environmental research including baseline studies.

(iii) To provide facilities for education and training.

The report further summarises the main characteristics of biosphere reserves.

(1) Biosphere reserves will be protected areas of land and coastal environments. Together they will constitute a world-wide network linked by international understanding on purposes, standards and exchange of scientific information.

(2) The network of biosphere reserves will include significant examples of biomese throughout the world.

(3) Each biosphere reserve will include one or more of the following categories :

(i) Representative examples of natural homes.

(ii) Unique communities or areas with unusual natural features of exceptional interest. It is recognised that the representative areas may also contain unique feature namely;

one population of globally rare species, their representativeness and uniqueness may both be characteristics of an area.

(iii) Examples of harmonious landscapes resulting from traditional patterns of land use.

(iv) Examples of modified or degraded ecosystems capable of being restored to more natural conditions.

(4) Each biosphere reserve should be large enough to be an effective conservation unit and to accommodate different uses without conflict.

(5) Biosphere Reserves should provide opportunities for ecological research, education and training. They will have particular value as benchmarks or standards for measurement of long term changes in the biosphere as a whole. Their existence may be vital to other projects in the MAB Programme.

(6) A biosphere reserve must have adequate long term legal protection.

(7) In some cases, biosphere reserve could coincide with, or incorporate, national parks, sanctuaries or nature reserves.

The main criteria for selection of areas to be designated as Biosphere Reserves could be summarised as follows :

1. Presence of genetic diversity and the potential for conservation of ecosystem in its totality.
2. Effectiveness as conservation unit, for example, availability of legal protection, freedom from human interference.
3. Representativeness.
4. Naturalness (least modified by man).
5. Importance; unique richness in genetic resources; areas which need immediate attention due to continuing threat to species contained therein; preservation of accumulated knowledge by specific ethnic groups.

These criteria are self explanatory. Fortunately India still continues to have a relatively large number of areas fulfilling these criteria. This would not be the case in areas of the world where industrialisation has taken a heavy toll.

Potential Areas

There are many potential areas in the country that could qualify for being designated as biosphere reserves. The most eminently qualified would be the North-East hill region of India which has a diversity of citurs, legumas, oil-seeds, rice and maize species and a variety of medicinal and ornamental plants. Similarly the Rishi Ganga Basin area including the Nanda Devi Sanctuary, in Kumaon Himalayas. It was only in 1934 that it came under human influence for the first time. Rishi Ganga Basin is rich in typical alpine fauna and flora and is in immediate need of protection. In the south the Mynad-Karnatak platau comprising the wildlife sanctuaries of Mudumalai (T.N.) Bandipur and Nagorhole (Karnataka) and Mynad (Kerala)—Silent Valley also have unique genetic resources peculiar to peninsular India including rain foresis and evergreen wet forests. Wadanthengal in the South and Chilka Lake in the East are good possibilities. In the Indian desert region potential area include Mount Abu, Jaisalmer-Barmer belt and, the Bharatpur and Ranthambore Sanctuaries. Other contenders include the Parvati Valley (Distt. Kulu), and Pangi Valley, (Dist. Chamba) of Himachal Pradesh and the Valley of Flowers in Uttar Pradesh. The Jaypore tract and Simplipal Hills in Orissa and its adjacent regions which represent the complex of premitive cultures in association, with the local tribal people are also suitable regions. Other valuable areas include the sub-mountainous regions of the Himalayas and also the remote regions in the Himalayan valleys of North-West India, particularly Satluj valley, Lahaul-Spiti and Ladakh valleys.

From a comprehensive list of such potential areas, careful selection will have to be made based on the criteria outlined previously. It is obvious that many non-scientific considerations (like political climate etc.) could tilt the scales one way or other.

No Uniforme legislation

Currently there is no uniformity of legislation regarding nature conservation in India. I understand that, the situation in this respect is no better, even at international level. In short when planning a Nature Reserve, that is a national park or biosphere reserve, one is to start with legislation. Then the planner must have the guidelines to assist him in his planning. The planner further has a responsibility to understand the objectives clearly to work out the costs and benefits (including the social ones). Human factor need to be given due consideration. To understand local population's reaction towards proposed land use, a sociological survey must be made. The planner should then put forth the plan which is the best for achieving the accepted objectives. The two components of an ideal management plan would include; the descriptive part which gives an account of the characteristics of the ecosystem, and the prescriptive part which delineates long term plans of action depending in the established objectives.

The first step would involve collection of as much existing information as is available from literature or reports on the area to be managed. A floral survey and preparation of vegetation map is necessary. In many cases it is possible to list a number of factors which could lead to changes in the habitat. Where relevant, it is useful to have a hydrological survey to assess the quality; quantity and seasonal changes in the ground and surface water in the area. Supplementary to the floral survey would be the faunal survey and preparation of fauna distribution and abundance map with special emphasis on those species which have significant impact on the ecology of the area. Lastly one would conduct a human settlement survey to ascertain the size, distribution and other characteristics of indigenous population in the area as well as in the surrounding regions.

Core and buffer zones

Basically the biosphere reserves could be divided into : *core zone* forming the sanctum sanctorum and *buffer zone* which would face the human stress and also meet the research, education and wherever possible aesthetic needs of society.

The core zone, invariable encompasses watershed areas, along with specific habitats to be conserved in its pristine form and therefore needs to be perfected from non-native or exotic plant and animals. The area may possibly be open to strictly supervised entry by scientists, research workers and conservation authorities.

Besides these two zones the International Union for the Conservation of Nature (IUCN) wherever applicable suggests the possibility of two additional zones :

A reclamation or restoration zone, that encompasses areas where natural or man-caused activities or disasters have heavily altered landscapes to the extent where ecological thresholds have been exceeded, biological processes have been interrupted and species have logically become extinct. In this zone research, education and training activities could centre around reclamation of natural resources.

The stable anthroporphic or cultural zone which is managed to protect on-going stable land-use systems where man and nature are living harmoniously. This zone also serves for education, research and training in reference to the study and understanding of traditional cultures and technologies.

Planned approach

In addition, the objectives of the biosphere reserve project provide for planned coordinated and cooperative research, education and training activities on national and international level. Thus, in practical terms, these four zones need to be identified for study and observation by scientists and resource managers. The land management, scientific and educational organisations of the cooperating nations are presumed to participate in the development of a mechanism for the international sharing of expertise and information, and to support the development of guidelines for comparable methods on measurement research techniques, and the collection and storage of data, specifically, it is implied that each participating nation, to the extent possible, will support international cooperative activities in these designated zones with physical facilities, equipment and manpower.

Thus an idealised biosphere reserve should have all four zones each bordering on one another. In practice, however, several variations on this idealised model are necessary because of the scarcity of vast wildlands, existing conservation and research areas and the overall existing land use patterns.

In conclusion it may be stated that a well planned and rationally managed network of biosphere reserves is the only practical solution towards an effective nature conservation programme and at the same time without competing or detracting from other on-going conservation efforts. In fact through the aforesaid objectives, the management strategy and administrative structure, the existing nature reserves as well as the proposed biosphere reserves can be developed to much greater efficiency. The gaps in existing efforts in this direction can be identified, new areas can be established and complementary zoning can be adopted within or around the periphery of existing National Parks and Wildlife Sancturies. This comprehensive strategy of planning and management of conservation through biosphere reserves, can ensure and offer several options for research, education and training. □

Karnataka's rural housing programme

THE Karnataka Government has launched a crash programme of constructing 1.75 lakh houses this year for the economically weaker sections of the rural areas. This includes the completion of the backlog of 73 thousand houses. This is with a view to see that each village which has not so far been covered under the scheme gets at least 10 houses and each Taluk at least 100 houses this year. Towards the implementation, a sum of Rs. 9 crores has already been released and kept at the disposal of Deputy Commissioners.

So far 11.81 lakh families have been identified as siteless in rural areas of the State and of them 10 lakhs families have already been provided with sites. 33 per cent of the sites have gone to scheduled castes and scheduled tribes.

N.C.C. is 34

THE 34th anniversary of the National Cadet Corps was observed recently by over 11 lakh boys and girls cadets all over the country. The President, Shri Zail Singh, has commended the NCC for 'playing a very useful role in inculcating discipline in students and developing qualities of leadership in them'.

The National Cadet Corps is in for a major reorganisation with its Junior Division at the base. This has been decided by the Central Advisory Council for the N.C.C.

Construction of fishing harbours

THE Centre have sanctioned the construction of one minor fishing harbour at Pazhayar in Tamil Nadu at an estimated cost of Rs. 67 lakhs and one small landing centre at Jafrabad in Gujarat at a cost of Rs. 14 lakhs.

In addition, Central assistance amounting to Rs. 153 lakhs has been released to the States for the construction of minor fishing harbours at Neendakara in Kerala, Malpe in Karnataka, Kakinada and Nizampatnam in Andhra Pradesh, Ratnagiri in Maharashtra and Jafrabad, Veraval and Mangrol in Gujarat during the year 1982-83 so far.

Grant-in-aid amounting to Rs. 115 lakhs has been released to the Port Trust for the construction of major fishing harbours at Madras in Tamil Nadu, Visakhapatnam (2nd State) in Andhra Pradesh and Season Kock in Maharashtra.

Livestock development vital for animal energy

ABOUT 11 *PER CENT of the total livestock of the country is in Rajasthan State. The cattle head contribute considerably to the economy of the State. Shri Shiv Charan Mathur, Chief Minister of Rajasthan in his inaugural speech at the National Seminar on "Problems and Prospects of Livestock Development", held in Jaipur recently stated that the livestock development had assumed crucial importance in view of over-exploitation and erosion of renewable resources of energy in the world. He felt that animal energy would play an important role in future. Excerpts from his speech are given below.*

Shiv Charan Mathur

INDIA HAS ABOUT 17 per cent of world's cattle and 50 per cent of world's buffalo population. Agriculture contributes about 45 per cent of the net national product in Indian economy. 18 per cent of this output is directly contributed by livestock. As far as Rajasthan is concerned, animal husbandry is a major economic activity providing over 12 per cent to the total net domestic income. Thus it's not a mere adjunct to crop agriculture. State, moreover has 12 per cent of total sheep population of India and contributes about 40 per cent of wool produced in the country. Problems and prospects of livestock development, thus is one subject in which not only economists, planners and administrators of Rajasthan but every citizen is keenly interested.

Livestock development has assumed crucial importance today in view of over-exploitation and erosion of renewable resources in the world. The perception of finitude of ecology has put in the concept of limits to growth before us. In future, growth may have to be directed in areas where mechanical and electrical energy requirements are least. Animal energy may become important again. Livestock development has got to be viewed in that context. We will have to make projections for our energy requirements as also energy likely to be provided by animals. If this is to be done livestock management system will have to be improved. No problem in any sphere can be solved in isolation. An integrated approach is the answer for problems besetting us. In case of livestock development also an administrative system has to be developed which takes an integrated view of problems and potentialities.

Today, administration of livestock development in the country rests either with the generalists or with technicians trained in veternary science. Some disciplines like dairying etc., have developed in the country independently, but rarely integrated approach can be practised by specialists trained in segments of an area.

Big strides in new breeding techniques

Biggest strides were taken by livestock development programme with the introduction of new breeding techniques. It is a recognised fact that all animals are not equal, or if that hurts the sensibilities of some, I would quote though originally used in a different context, the George Orwellian aphorism that all animals are equal but some are more equal than others. Some are bigger, leaner or more efficient at converting their food into eggs, milk or other live-stock products. That fact and a basic knowledge of genetics are the foundations of animal breeding industry. Oridinarily crossing the best bull or turkey cock with the best cow or turkey hen may mean that their off-springs will be better than those of other pairs. However, this basic principle of selective breeding has to be so applied that traits wanted in the animals in a country or State or an area are maximised.

However, the best animal is unlikely to be best in all respects. One breed of bulls may be good for agricultural and transportation purposes whereas other is good for purposes of breeding of good heifers. Similarly a chicken may grow fast and be more suitable for table purposes but lay few eggs and another may be a profilic layer but may grew slowly. Thus selection of breeds for a particular area has got to be based on a thorough knowledge of necessities of that area. Selection of breeding stock, arrangement of semen, transportation of semen, its preservation in near natural conditions and its availability at the critical moments are some of the matters which the Seminar is bound to take up for discussion. However, many more sophisticated techniques are being developed today in the world.

Embryo transfer

I will take in this context an example of embryo transfer. Embryo transfer is becoming popular in West slowly. A cow, hen or sow is given fertility drugs before they come to heat. This results into their producing as much as 40 eggs. These eggs are fertilized by artificial insemination. After fertilisation the eggs are removed and transplanted into other second rate females which then act as incubators. Now that syringe like devices have been invented to introduce fertilized eggs into carrier animals and no surgery is required, the technique has become less bothersome. Third World countries which have many second rate animals which can act as carrier animals can probably be benefited much more embryo transplants provided cost of these transplants can be brought down.

However, no uniform breeding facilities/schemes can be applied to all areas and all animals. Sheep for example graze over wide areas and sheep farmers are often scattered over long distances. It is much easier to organise breeding schemes for cows but many more problems occur when these schemes are introduced for sheep. It would be better if few farmers in one area club together to build up a nucleus herd and all use these specially selected sheep as breeding stock. This could be possible even for migratory sheep. Similarly dairy development in drought prone areas is part of dry land farming and drought prone areas keeping of improved indigenous animals rather than exotic half breeds may be more successful. My contention in making these remarks is just this that methodology utilised for one particular type of animal may have to be modified for development of another type. While planning livestock management we have to be aware of habits and customs of farmers. Unfortunately our planners, administrators and technicians rarely come from these segments of this Society. Thus it becomes our added responsibility to study habits and customs of the group thoroughly with which we are dealing. Only then it will be possible for us to develop a better livestock management system.

Improvement in socio-economic conditions

In India livestock development programme is of much more significance because it has brought improvement in the socio-economic conditions of the weaker segments of the society. But this is also a reason that programmes have not been able to get fast momentum as these segments suffer from chronic shortages of resources. Breeding programme that I discussed and other areas of development are unfamiliar to traditional livestock farmers or poorer segments of the society. It is thus essential to provide an efficient extension service as also an efficient supply line of inputs if livestock development programmes are to succeed. If Dairy Development Programmes are to be made successful services like making available semen green fodder and cattle feed have also got to be developed and streamlined. By imparting knowledge to the farmers productivity of existing livestock can be increased. Knowledge is essential for the farmers in improving the reproduction the stock with superior indigenous stock etc., Infrastructure in the countryside will also have to be developed so that extension services reach the farmers in time and regularly. Small holders who are dependent on daily income from livestock have also a considerable amount of economic rationality in their decision making. What is required is providing of knowledge to them enabling them to react to the strides of latest technological developments with all the traditional know-how and their age-old experience. Such interactions, I am of firm belief, will yield rich harvest.

Such extension service cannot be provided by people coming from urban orientation. Apparently a work which requires dedication and involvement cannot be performed by persons who are not involved in the welfare of farmers. Village youths will have to be trained in techniques as also in extension to make extension services a success.

Effort to make more fodder and feed available for livestock population has got to be integrated with other efforts not only in livestock development but in crop agriculture also. To cite an example the availability of fodder in Rajasthan is sufficient to support only 87 per cent, 79 per cent and 48 per cent of the present livestock population during a good, normal and drought year respectively. Livestock development is thus linked with agricultural development intimately. With improved techniques, production of other basic agricultural products has got to be increased as also that of fodder. Afforestation is also similarly linked with fodder and feed production. Pasture development programme has got to be taken in a big way and resources will have to be diverted to these areas if livestock development programmes are to succeed. Production of ordinary and leguminous fodder, assistance to individual farmers for development of indigenous pastures, afforestation and growing of fodder in irrigated areas have to be taken up in a big way.

Marketing strategy

Marketing strategy of livestock products is very relevant for the success of these programmes. Decisions in this area have to be based on scientific and organised lines. Assessment of marketing opportunities and development of a strategic marketing plan adjustments in production of a strategic marketing plan by adjustments in production of products are two important factors. Consumer patterns and preferences can be changed by strategic market planning. However, what are important in marketing of livestock products are the economic and social conditions of consumers as also producers. Most livestock products are produced by small animal husbandry men. Pattern of operation flood in India has given us some experience in marketing of livestock products. Establishing cooperatives and marketing of products through them has been quite successful in case of dairying. Success has however, been very limited in case of Sheep-wool societies. Marketing strategies have got to be searched as can eliminate middlemen in livestock product marketing; at present they abound in the system.

Pricing policy

A rational and positive pricing policy followed by marketing infrastructure is also necessary for livestock development. Again to cite an example, Rajasthan produces about 40 per cent of the wool that country produces. However, no marketing infrastructure could be provided earlier for wool producers. A systematic

(*continued on page 26*)

Glimpses of Rajasthan's economy

Rajasthan has a variety of resources in the form of livestock, tourism, agriculture and mineral wealth. But desert and drought have been impeding any attempt to improve the economy of the State. Here is an interesting account of what has been achieved, what are the potentialities and what are the future programmes in the State.

J. S. Mathur

RAJASTHAN WHICH CAME INTO being on 31st March 1949 is the largest State in area next to M.P. The State extends over 3,42,214 sq. kms., 1/3 area of it being a vast desert. Desert is a challenge to the ingenuity of man and a test of his patience. The Western plain is commonly known as the desert region. Aravalli ranges divide the State into two parts the North-western part comprising 3|5th of the total land, and the South-Eastern part consisting of the remaining 2|5th. The climate is dry except in the Southern parts. According to 1981 Census, the population of the State is 3,41,08,292. The literacy rate is 24.05 per cent which is less than all India Average of 36.17.

Drought has been an annual feature. During the last 15 years (1967—82) for only three years (1973-74, 1975-76 and 1976-77) the State was free from drought. For eight years the entire State was in drought. In rest of the four years, more than half of the State was affected by droughts. From inception a huge sum of Rs. 700 crores has been spent on drought relief till date. To meet the recurrence of drought and launch measures for their avoidance, a special programme known as "Drought Prone Area Development Programme" has been started in the State.

Rajasthan has a variety of resources. The mineral wealth of the State is recognised both far and near. The State has almost the entire reserves of the country of several minerals e.g. zinc. gypsum, lead, emerald, garmet, cobalt and salt. It ranks among the foremost in the output of soapstone gypsum, limestone, asbestos, calcite, beryl and felspar. Almost 4/5th of the mineral turnover of the State is confined to the eastern region in the districts of Bhilwara, Udaipur, Ajmer and Jaipur. The salt sources located at Sambhar, Didwana and Pechbhadra provide valuable raw-materials for the establishment of chemical industries.

Rich in Livestock

The State is rich in livestock. It is the state where the livestock population exceeds the human population. At present livestock population of the state is 4.13 crores, while human population is 3.41 crores only. It has the monopoly of the best breeds of camels. The *Chowkla* bread of sheep found in the districts of Churu and Sikar give the best quality wool.

The recorded forest area in the State is 37,640 sq. kms., constituting about 11 per cent of the total geographical. The important forest products are timber, firewood, charcoal and bamboo. Other minor products are *tendu* leaves, *katha,* gum and resins; honey and wax, *mahuva* flowers and fruit, khas and grass.

The important rivers of the State are the Chambal, Luni, Kalisindh, Parvati, Mahi, Banganga and Bavaas. Chambal is the only perennial river in the State. The state has a number of lakes. Some important lakes are Puskar, Sambhar, Fatehsagar, Didwana, Annasagar, Pichoula. Based on available opportunities the projects like Chambal Valley Hydro-Electric Project, Moha Project, Iota Dam, Automic Power Station at Ranapratapsagar, Rajasthan Canal Project, Bhakra Project, etc., are in operation.

The financial resources of the State are limited. The funds available are insufficient to initiate the process of rapid industrialisation. Assistance from financial institutions like the IDBI, IFCI, ICICI etc. has also not flowed into the State in any significant measure. According to the figures of 1979-80 the total investment of these institutions and Rajasthan's share in that investment is given below :

(Rupees in crores)

Institution	Total investment	Rajasthan's share	Percentage to the total
IDBI	3374.4	133.4	3.95
ICICI	6296.8	34.1	0.54
IFCI	771.0	44.4	5.75

In addition, Rajasthan got only Rs. 227 crores in 1979-80 out of total investment of Rs. 11,351 crores made by Central Government in public sector undertakings. These figures disclose this fact that Central Government as well as financial institutions have given a step mother treatment to Rajasthan.

Transport and Communications

At the beginning of first Five Year Plan, the State had a total length of 17,339 kms., of surfaced as well as unsurfaced roads. By the end of 1981, total road length increased to 62,574 kms. in which surfaced road length was 34,028 kms. The number of passenger buses in the state in 1979-80 was 13,430; including 2,213 buses owned by Rajasthan State Road Transport Corporation. At present the Corporation has 2,345 passenger buses, which constitute 17 per cent of the total number of buses in the State. Railways, in the State, are operated by the Northern, the Western and the Central Railway administration. The Northern Railway serves chiefly Bikaner, Jodhpur, Shriganganagar, Hanumangarh and Churu districts; Western Railway the districts of Alwar, Jaipur, Sawaimadhopur, Kota, Ajmer, Udaipur, etc. and Central Railway caters the needs of Dholpur and Gangapur. Generally, it is full of meter guage. The rest of the State has negligible facilities of Railways. The important airports of the State are located at Jaipur, Udaipur, Jodhpur and Kota. These airports have adequate communicational and Navigational facilities. Inland water transport has not developed, as yet, in the State. The State has no port and coastal line. Considering the size of the State and its variegated terrain, the network of different modes of transport needs a lot of attention.

Rajasthan has its own financial corporations in addition to a network of numerous commercial banks meeting the financial needs of entrepreneures. Although literacy rate is less in Rajasthan than all India average, the State has a number of educational institutions. There are three famous universities namely, Rajasthan University (Jaipur), Jodhpur University and Udaipur University. There are many professional colleges in various fields.

The manpower of Rajasthan is primarily rural in character. About 82 per cent population of the State live in villages. About 77 per cent of State's working population is engaged in agricultural pursuits; 65 per cent as cultivators, 9.4 per cent as agricultural labourers and 2.6 per cent are in other allied fields. Agriculture makes a very substantial contribution to the gross state income. It's contribution to the total State income was 55.3 per cent in 1960-61 and 57.2 per cent in 1978-79.

Kharif crops which are rather inferior crops are predominant in the State, and this is one of the reasons why in money terms, there is low productivity of land per acre. The principal cereal crops (rice, wheat, barley and maize) accounted for only 19.5 per cent of the total cropped area in 1979-80 while the secondary cereals which are low value crops covered about 36 per cent of the cropped area. Similarly, cash crops such as oil seeds, sugarcane and cotton were grown only 9.4 per cent of the cropped area.

Crop pattern

Irrigation has its say in moulding the crop pattern in Rajasthan. The low rainfall and meagre means of irrigation tend to make the land mostly one cropped area excepting eastern and southern region and Ganganagar district in the north. It may be noted here that a large part of the area of the State cannot be used for agriculture purposes since about 13.2 per cent of the area is not available for cultivation, 24.7 per cent is uncultivable land and 12.3 per cent is classified as fallow land. Thus about 50.2 per cent of the area is not utilised for agriculture.

The original disparities in the pattern of land utilisation, irrigation and soil-type are manifested in the regional cropping pattern. The principal cereal crop in the arid and semi-arid zone is bajra, which is mostly grown in districts of Jaisalmer, Barmer, Jalore, Jodhpur, Nagaur, Churu, Jhunjhunu and Bikaner. In the eastern region, jowar is the principal crop grown in the districts of Jhalawar, Kota, Bundi, Ajmer, Tonk, Bharatpur and Chittorgarh. In the southern region, maize is primarily cultivated in the districts of Udaipur, Banswara and Dungarpur. Of the remaining cereals, wheat and barley are predominently grown in the areas where facilities for irrigation are available, viz., in the districts of Sriganganagar, Jaipur, Tonk, Pali, Kota, Sawaimadhopur, Alwar and Bharatpur. Rice is grown largely in Banswara district. Rajasthan is supplier of bajra, jowar and maize to deficit states in the country.

Among the commercial crops, oilseeds and cotton deserve special mention. Groundnut among the kharif and sesamum and rape and mustard among the rabi oilseeds are important. The concentration is mostly in the eastern districts of Bharatpur, Alwar, Sawaimadhopur and Kota. Cotton growing is concentrated in Chittorgarh, Bhilwara, Udaipur, Jhalawar and Shriganganagar. Sugarcane is grown mostly in Shriganganagar district as also at Kota and Udaipur. As for condiments and species, zeera and dhania are grown in Kota, Jhalawar, Swaimadhopur and Udaipur districts and are mostly exported to the neighbouring States.

The State produces about 5 per cent of country's production of cereals, 15.5 per cent of pulses, 7 per cent of oilseeds, 14 per cent of sugarcane and 7 per cent of cotton.

The livestock industry is the next important sector in the State's economy following agriculture. It contributes about 15 per cent to the total state income and is thus a major economic activity providing independent as well as supplementary source of livelihood to a large proportion of population.

On crore sheep

Out of the total livestock of 4.13 crores, there are about one crore of sheep, which produce approximately 140 lakh kilograms of wool. About two lakhs of the people of the State are engaged in promoting sheep and wool production. Available figures show that from first to fifth five year plan, the State Government spent only a nominal sum of Rs. 379.40 lakhs in promoting sheep and wool production, while in sixth plan there is a provision of Rs. 450 lakhs. This shows that now the State Government is taking keen interest and paying its best attention to the promotion of this sector. For promoting sheep and wool production and marketing to benefit the sheep farmers, State level organisation has been set up. During the current annual plan, the government has made a provision to contribute Rs. 44.46 lakhs to this organisation.

The desert region of the State has predominance of drought animals sheep, goats and camels. In the plain and the southern, there is maximum concentration of livestock and poultry. Among all the districts, 'pigs' are in maximum number in Jaipur district. Udaipur has the largest number of horses and ponies in the state. The eastern region has the buffaloes, goats and sheep in a good number. In the south-western region, sheep and goats are found in large number. The State has the best breeds of camel, the important of which are *Bikaneri and Jaisalmeri.*

The State has started a number of projects and programmes for development of the livestock. Special livestock production projects through small and marginal farmers and agricultural labourers are formulated based on the recommendations of the National Commission on Agriculture. A number of sheep production projects and pig production projects are also taken up in the State. Cattle-cum-dairy development project has been started. Financial and technical problems of cattle-cum-dairy development are being solved by the State Dairy Development Corporation. The government is paying a special attention to the preservation and rehabilitation of camels. For increasing the productivity of cattle and buffaloes, concerted efforts are being made to contain the increase in the population of cows and she-buffaloes and to change the structure of these population by replacing non-descript local stock by high producing cows of indigenous breeds, crossbred cows and improved buffaloes. A Deep Frozen Semen Laboratory has been added to the existing Animal Genetics Station. The Livestock Field Investigation Station, Bassi (Jaipur) has been extended by opening two new sections on Animal Nutrition and Animal Pathology.

Late starter in industrial development

Industrial development of the State had a late start. Pandey Committee appointed by the Government of India in 1969 reported that 16 out of 26 districts of the State were quite backward from the industrial point of view and in the remaining ten districts the industrial progress was reported unsatisfactory. In view of various concessions and incentives, the momentum of industrialisation has gone up during the last decade. Now the State is well known for development of various industries.

A number of incentives and concessions are being extended to entrepreneures by the central and the State governments. Village artisans are also being helped by advancing loans to them at nominal rates, non-refund grants and technical and marketing guidance. About 39,000 units of small and cottage industries had been registered with the Directorate of Industries by the end of 1981 with an outlay of about Rs. 147 crores.

From 0 to 44

Prior to independence, there was not even a single woollen mill in the State, but by the end of 1981, 44 woollen mills had been established. About 20 per cent of the total export of woollen goods and raw-materials from the country is accounted for by the State. Some important cotton textile mills are located in Kota, Jaipur, Sriganganagar, Pali, Kishangarh, Bhilwara and Vijaynagar.

The limestone deposits found in the State are helpful in establishment of cement plants. Cement plants of Sawaimadhopur, Chittorgarh, Udaipur and Lakhari are already working smoothly. A new plant established in J.K. Puram in Sirohi district has commenced production from August 15, 1982. It is the most modern cement plant of the country. Latest dry processing technology is used in it. In addition to these plants, Cement Corporation of India (CCI) is exploring the possibility for setting up a 25 lakh tonnes annual capacity cement plant near Bundi.

There are four important central public sector enterprises in the State, namely—Hindustan Zinc Ltd. (Udaipur), Hindustan Copper Ltd. (Khetri) Hindustan Machine Tools (Ajmer) and Instrumentation Ltd., (Kota). In addition there are a number of State and private enterprises helping in the industrial development of the State. In private sector, rise in the production of sugar, vanaspati, fertiliser, synthetic fibre, chemicals, and engineering industries has been significant during last few years.

Vast tourist potential

Rajasthan has vast tourist potential. It has a number of sites of tourists' interest at Jaipur (pink city of India), Kumbhalgarh, Chittorgarh, Ranthambore, Jaisalmer, Jodhpur, Bharatpur and Sawaimadhopur. Its legendary historical monuments are spread over various parts of the State.

Some of its religious shrines not only attract the discriminating foreign and local tourists but also draw huge religious crowds. The sancturies both for birds and animals are the other important attractions. The sanctuary at Bharatpur is well known as world famous ornithologist Dr. Salim Ali is associated with it. The range of fare offered is from Udaipur, a city of lakes to the desert dunes of Jaisalmer. The festivals, folk music, folk dances and other cultural activities have allured the tourists to Rajasthan. Yet another source of attraction has been the artistic heritage, which offers the travellers a variety of pleasing merchandise. The State Tourist Department is engaged in establishing the infrastructure for giving a boost to the inflow of tourists. To keep pace with the demand of accommodation for tourists, a number of tourist bungalows have been constructed at different sites of tourist interest. Financial support for the development of tourism industry of the State is provided in the State plan in addition to the support provided by Tourism Development Corporation(TDC) and the Hotel Corporation of India (HCI).

The above mentioned information shows that there is hardly any doubt about the bright future of Rajasthan if livestock, tourism, agriculture and mineral wealth is optimally tukozed without any grain of self-centered regional politics. The Central Government also must pay a special attention to the State in view of its variegated terrain and size of the State.

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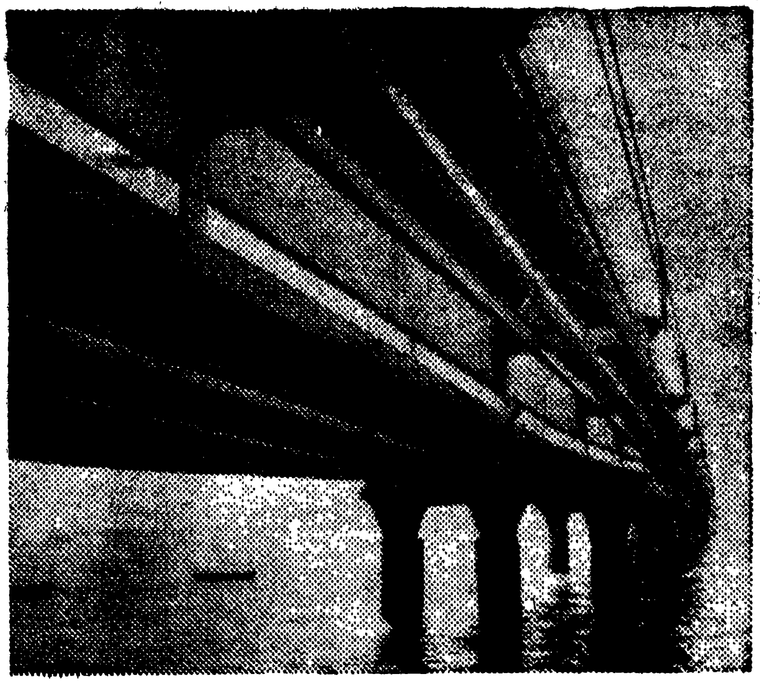

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Kindling the sagging spirit of farmers

Despite the implementation of a number of developmental plans, still we have some drought prone areas and hence the Drought Prone Areas Programme (DPAP). Thanks to the innovative approach adopted by the DPAP authorities, backed by the finances provided by the Malaprabha Grameen Bank some villages in Dharwad and Belgaum districts of Karnataka, small farmers are now forming societies called "Society of Community Sprinkler Irrigation Project". In these villages, wells are dug and pumpsets installed to ensure adequate supply of water. Nomadic tribes, SCs/ STs who have left their villages in search of livelihood are now returning to reap bumper crops. Here is the success story.

Vasudev Bhat

THREE DECADES OF PLANNING has still not left us free from drought prone areas and gambles on monsoon. That has made certain pockets of areas, where agriculture is just a pastime not a vocation.

An innovative approach adopted by the DPAP (Drought Prone Areas Programme) authorities in Dharwad in Karnataka with matching financial back-up provided by "Malaprabha Grameena Bank—a Regional Rural Bank"—operating in Dharwad and Belgaum Districts, has helped to find a solution to the problems of scanty rainfall—a basic feature of drought prone areas—and harness the available water resources.

Floating of a cooperative

The innovative approach envisages floating of a co-operative society by 15 to 20 persons, who are having all small holdings of compact agricultural lands. The society is known as "Society of Community Sprinkler Irrigation Project". And the problem of water is solved by systematic exploitation of underground water.

Then seek the financial assistance from the Regional Rural Bank (Malaprabha Grameena Bank) to meet the cost of boring 2 or 3 irrigation wells; installing pumpsets, and laying feeder pipes to carry water to the fields of Society members. It is a co-operative venture so far as sharing of water is concerned but the farming and its results are one's own individual efforts. It is a co-operative farming not a collective one.

Lakkalkatti is a village in Ron Taluk of Dharwad District. The village is in an interior location remained inaccessible to normal road traffic. And lies about 5 kilometers off the main roads. Little above 300 families of Lakkalkatti have a total cultivable land of a meagre 600 acres. Rain being scanty at best, they could be happy with one crop a whole year.

Sprinkle Irrigation

Today the village has as many as six Sprinkler Irrigation Community Projects that cover over 300 acres. One of the projects exclusively belongs to tribal community (Lambanies). In another 72 per cent of the members belong to Scheduled Castes.

Most of these Lambanies who gave up their agricultural operations and left their village in search of jobs now are back into their fields. Their 55 acres of land has an assured irrigation for at least two crops a year. Maximum holdings of members of this Society is five acres. Many of them own less than an acre.

Shri Ramappa Govindappa Lamani, the Chairman of the Sprinkler Irrigation Society is just 27 years old. He is illiterate. But that has not come in the way of his grasping the project economics. "We are sure to be better-off", he says with confidence, "We used to be begging for work in other farms; now we need not". "We can work on our own", and mother earth will never disappoint us, he says with utmost confidence in this venture.

Better farm methods pay

Chickmanur, a few kilometers away from Lakkalkatti, where Shri Bharamappa, a Scheduled Caste is the Chairman of the 17 members society. The Society owns a total of 48 acres. Last year they reaped an yield of 6 bags of groundnut or 25 bags of hybrid jowar per acre : the yield they had not dreamt off and a net profit of Rs. 500 or more per acre, they never heard of in their life time. Shri Mahadev Chalawadi has a land holding of hardly 1|4th of an acre. He had been able to raise four quintals of groundnut; to the surprise of even his own family members. All of them now are hopeful of taking three crops in an year. In one of the societies five farmers are all set to raise grape gardens in 10 acres.

After growing and harvesting bumper yields of hybrid and high yielding varieties of Mexican wheat, jowar, maize and cotton during the first year, some of them have now gone in for seed production too. Few of them even took as many as three crops a year due to better farm and water management practices.

Karjagi, Timmapur Tanda (a tribal inhabitation) in Haveri Taluk, Itagi Bilihalli, Benakamakonda, Karur and Hediayal villages of Ranebennur Taluk; Jakkali, Maranabsari, Abbigeri and Itagi of Ron all have now taken-up "Community Sprinkler Irrigation Projects". Sixty more are being proposed to bring-in a total of 2817 acres belonging to 1064 farmers under irrigation.

In the first 12 projects in 11 villages, out of 183 farmers, 108 were Scheduled Caste covering an area of 519 acres. So far Malaprabha Grameena Bank has sanctioned Rs. 71,96,000 for 57 such projects. Of which 16 Community Sprinkler Irrigation Projects are exclusively meant for SC's and ST's involving Rs. 32 lakhs.

The investment by the Bank was Rs. 1.58 lakhs for the first phase of the schemes commissioned earlier years. This has gone up to Rs. 2 lakhs for subsequent schemes. The Bank's investment covers boring of wells, installing pumpsets and laying feeder pipes to carry water to members' fields.

The innovative approach

The innovative approach adopted by the DPAP authorities and Malaprabha Grameena Bank in Dharwad of Karnataka has kindled the sagging spirits of hundreds of farmers in the district.

From a situation where agriculture was only a pastime the beneficiaries of "Community Sprinkler Irrigation Project" have now taken agriculture as a Vocation. What more ? Making life more meaningful for the small and marginal farmers, forms the main thrust of Prime Minister's New Economic Programme. And that has been transformed in letter and spirit in this experiment of the Rural Bank in Dharwad District. □

Live stock development

(Continued from page 20)

attempt is now being made by establishing wool Mandi at Bikaner. Marketing infrastructure if provided is bound to lead to positive price policies. This will automatically ensure the availability of the live-stock products to consumers at fair price because producer will be able to get the margin of profit which today is appropriated by the middlemen. Pricing policy in dairying has been a sensitive issue. In structure which operation flood has established price issue becomes central concern of the over-all policy. Consumers are very sensitive to the issue and so are producers. In the matter of price policy solutions which are merely palliatives will not do. These solutions may not satisfy the producer or consumer for any length of time. It is evident that in the long run some sort of cost-plus price will alone work. In India organised industry with access to modern technology is allowed to pass on the burden of increasing cost to consumer. It is really unfortunate that small and generally resource-poor farmers are preached the necessity to practise better techniques and reduce their cost of production. Whatever be the pricing policy these farmers will have to be protected. In fact the question of live stock product pricing in general is to be seen as linked to the over all incomes and pricing policies.

I have touched only few aspects of live-stock development Pisciculture, piggery and many other aspects have not been touched by me. I can only say one thing that live-stock development has a bright future in Rajasthan as also in our country. Today beef farmers like their cows to produce bull calves ; Dairy farmers on the other hand like theirs to produce heifers. Nature is not that obliging but in near future techniques of artificial insemination and embryo transfers could change this if only the sex of sperm and embryo could be determined. Researches into this are going on and any day a breakthrough may be achieved. Future may also see techniques of cloning and genetic manipulation of embryo transplants. When cloning becomes possible best cows and bulls could be replicated over and over again. By genetic manipulation we may be able to increase the number of genes controlling say milk production or other traits in embroys and animals. No doubt Scientists will have to know much more about chromosome structure and embryonic development and to have more sophisticated ways of insinuating genes into specific sites in embroys before these possibilities become realities. One thing however is certain. Application of technology to livestock development has opened immense possibilities in the area and future of live stock development is definitely full of potentialities.

About 1.25 Lakh F. P. operations in M. P.

ABOUT 1.25 lakh family planning sterilisation operations have been performed in Madhya Pradesh in the middle of November 82. It is about 70 per cent more than the number of operations conducted last year during the same period in the State.

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ASIAD-1982
A grand achievement

JOHN CHURCHILL

THE 9TH ASIAN GAMES are now *a fait accompli.* By all standards and from all points of view, the Games were a mighty success. As a sporting event, it was the biggest Asiad ever—21 different sports and games were involved and the largest number of 33 countries in the continent fielded nearly five thousand top sportsmen and women. More than sixty new records were established. Thousands of workers, engineers, architects and officials, with a missionary zeal, completed the construction works of the various stadia.

For over a full fortnight starting from 19th of November '82 millions of people all over the Asian continent heard nothing but sports. The mass media like Radio, T. V. and newspapers had nothing but sports and games to offer. For sixteen days in almost all the seventeen stadia in the Capital, one could hear only musical chanting—"Come on India", "Come on Japan" "Come on Korea", "Well done China", "Keep it up Indonesia". In their quest to achieve the Olympic ideals of faster, higher and stronger, the continent's top sportsmen and women brought the Asian Games records tumbling down. Athletics alone saw 27 new records. In swimming, there are 25 new records. Six shooters shot their way to glory establishing new marks for the future shooters to conquer.

The biggest achievement of Asiad 82 is the improvement in general standard of games and sports in the continent. In a way, the 9th Asian Games were a blessing in disguise for one and all, especially for India. Before I proceed further, describing the positive achievements of the Games, let me briefly dwell upon the highlights of the games.

Highlights

Sportwise, it was a keen tussle, rather a neck to neck race between Japan and China. Ever since the Games began in 1951, it was the monopoly of Japan in the tally of medals. This time, their supremacy has been challenged. It was a photo-finish between China and Japan in their rush for gold, silver and bronze. Both the countries won 153 medals each. But China by virtue of winning more gold medals could replace Japan from the top position for the first time. India finished fifth with 57 medals—13 gold, 19 silver and 25 bronze.

Out of the 21 disciplines, China emerged champions in seven badminton, gymnastics, table tennis and weight lifting. They also shared glory with Japan and South Korea in basket ball and volley ball. On the other hand, Japan reigned supreme in athletics, cycling, swimming and wrestling. South Korea who finished third with a tally of 93 medals, became champions in archery, boxing and tennis.

THE MEDALS TALLY

Country	Gold	Silver	Bronze	Total
China	61	51	41	153
Japan	57	52	44	153
South Korea	28	28	37	93
North Korea	17	19	20	56
India	13	19	25	57
Indonesia	4	4	7	15
Iran	4	4	7	15
Pakistan	3	3	5	11
Mongolia	3	3	1	7
Philippines	2	3	9	14
Iraq	2	3	4	9
Thailand	1	5	4	10
Kuwait	1	3	3	7
Malaysia	1	—	3	4
Singapore	1	—	2	3
Lebanon	—	1	—	1
Afghanistan	—	1	—	1
Hongkong	—	—	1	1
Vietnam	—	—	1	1
Bahrain	—	—	1	1
Qatar	—	—	1	1
Saudi Arabia	—	—	1	1
TOTAL :	199	200	215	614

The next Asiad as well as the 1988 Olympics are billed to be held at the South Korean Capital Seoul. One can well imagine where they will figure in the next Asiad.

India claimed the top position in equestrian, golf and women's hockey while Pakistan claimed the men's hockey and yachting. Football went to West Asian way to Iraq.

Undoubtedly, the hero of the 9th Asian Games is the 38 year old Shigenobu Murofushi of Japan who won the fourth successive Asian Games gold medal in the hammar throw and that too with a record of 71.14 metres. Murofushi made his mark in the Bangkok Asian Games in 1966 claiming a silver medal in the event. This tall, well-built Professor Murofushi proved to the world that one can beat father age, if one keeps himself fit.

The athlete who had held the crowd spell-bound was Zhu Jian Hua of China. He had aimed for a world record in the high jump. The bar was raised to an incredible height of 2.37 metres which was virtually unknown in India. It was indeed a treat to watch him sail over the bar effortlessly.

Another athlete that would be remembered for a long time to come is Felah N. Jaralla of Iraq who won the 1500 metres event.

The only sportsman who could win four gold medals in the current Asiad was the 29-year-old Army Officer Gil Man So of North Korea. He had accounted for two of the Six Asian records in the shooting events.

The darling of the crowd at the main stadium was the 18-year-old charming Fillipino sprint queen Lydia De Vega. She became the fastest woman in Asia winning the women's 100 metres race. The other girl that stole the limelight was the peti'e 16 year old Chinese gymnast Wu Jiani. Participating in her first Asiad, she kept the crowd at the Indraprastha Indoor Stadium spell-bound with her grace and fluidity. She has made gymnastics popular. It was a treat to watch her on the balancing beam. Her movement in the floor exercises, only make one feel that music has been made visible. Gliding through her exercises with unmatched perfection, she was simply poetry in motion. She had achieved a perfect score of 10, equalising the Olympics record of 1976 set by the Romanian girl Nadia Comneci. Jiani claimed two gold medals and 2 silver medals during the recent Asiad.

Equally outstanding were the Choi sisters of South Korea in swimming. The two sisters Youn Hee and Youn Jung together claimed 7 medals out of their country's total of 12 in swimming. The 15-year old Youn Hee captured 3 gold medals in the 100 m's., 200 mts. back stroke and 200 mets. individual medley with new record timings.

India's Performance

The competition in the 9th Asian Games was toughest ever. There was world class competition in almost every discipline. India's overall performance was not bad. India has every reason to feel elated. India finished fifth with a tally of 57 medals, the highest haul in any Asiad so far, the previous best had been 52 medals for India in the first Asiad in 1951 in New Delhi.

The Indian medal tally

Games	Gold	Silver	Bronze	Total
Athletics . . .	4	9	8	21
Boxing	1	2	3	6
Equestrian . . .	3	1	1	5
Badminton . . .	—	—	5	5
Wrestling . . .	1	1	2	4
Yachting . . .	1	1	1	3
Golf	2	1	—	3
Shooting . . .	—	2	1	3
Weight lifting . .	—	—	2	2
Hockey (Women) . .	1	—	—	1
Hockey (Men) . .	1	1	—	1
Tennis	—	1	—	1
Waterpolo . . .	—	—	1	1
Rowing	—	—	1	1
TOTAL :	13	19	25	57

During the previous Asian Games, India's lion share of medals came from Athletics. At the last Asian Games in Bangkok, athletics alone brought eighteen of the twentyeight medals—eight gold, seven silver and three bronze. This time India collected twentyone medals in athletics, four gold, nine silver and eight bronze. All the four gold medalists have established new Asian Games records. India would have got at least seven more gold medals. Indeed this was the remark of the Flying Sikh Milkha Singh who watched out athletes during the Asiad. Incidentally, Milkha Singh's own record in the 400 metres and 200 metre events, 45.6 seconds and 20.7 seconds are still intact. No Asian could neither equal nor break the records. There were several lapses that deprived India of the possible gold medals. Wrong Baton changing resulted in India losing the sure gold medals in the 4×400 relays. P. T. Usha and Geetha Zutshi were the most unfortunate ones. They ended up with silver medals. It was simply tactical errors during the race that deprived them from finishing first. Mercy Mathew also should have ended up with a gold medal in the women's long jump event. Her one foul jump measured 6.42 metres which was better than the winning leap of Liao Wenfen of China. Gopal Saini in the 300 metres steeplechase was the other Indian to miss the gold and settled for silver.

The four Indians—Chand Ram, Bahadur Singh, Charles Borromeo and M. D. Valsamma--all have showed their class and set new Asian Games records. That was indeed a matter of pride for India. The fifty thousand strong crowd at the main Jawaharlal Nehru Stadium gave a standing ovation to these national heroes and the heroine, who brought glory to the country.

The other gold medals for India have come from unexpected quarters, while the much sought after man's hockey gold medal has once again eluded us. The hockey final was a stunning experience for every Indian to see India losing by an incredible margin of one to 7 goals against our traditional rival Pakistan. Although, India started on an electrifying note by scoring a goal in the very fourth minute, it was an anti-climax from the 17th minute onwards. Ultimately, India had to settle for the silver medals for yet another Asiad. Of course, the silver never satisfies the Indians as for every Indian, hockey and gold became synonymous. Nothing but gold satisfies us as far as hockey is concerned. And that is what exactly the Indian women's hockey team brought for India. In a round robin match, the Indian women, defeated all the teams including Japan to claim the gold. Indeed, the Indian women's hockey team became the darling of the crowd at the newly renovated Shivaji Stadium near Connaught Circus in the heart of New Delhi Incidentally, the women's hockey was introduced in the Asian Games for the first time.

Golf, another game that was introduced for the first time also brought two gold and a silver medal for India. Equestrian introduced in the Asian Games for the first time, accounted for three gold medals. for India besides a silver and a bronze.

The much expected wrestlers, weightlifters and shooters performed rather poorly. In weightlifting, India could manage to get only two bronze medals. In wrestling the heavy weight Satpal brought the lone gold medal, for India and Kartar Singh claimed a silver medal while Rajinder Singh and Ashok Kumar accounted for bronze medals.

The Indian Boxers have won 6 medals—1 gold, two silver and 3 bronze. Kaur Singh was the lone Indian to retain his heavy weight title. Our shooters fell by the way side claiming only two silver and a bronze. A surprising progress was in the swimming in which the Indian water polo team managed to claim the bronze medal., while 5 of our swimmers qualified for the final amidst stiff competition. Yatching brought 3 more medals—one gold, one silver and one bronze. The other note-worthy performance was in football, where India played well in pre-quarter final league and entered the quarter final alongwith China. The match between India and China will be remembered for a long time to come by all those who watched the game either at the jam-packed Ambedkar Stadium or on the TV screen. Surprisingly, India was in the lead till 5 minutes before the final. If only India played with a little more determination, towards the end, the match would have ended with a two-one victory over China. But it was not to be. China scored the second equalizer just 5 minutes before the final. In Badminton also, India managed to claim 5 bronze medals which shows the tremendous improvement in the performance of our players.

Winning 57 medals is no mean job. It shows, that India has the required talent. It has to be nurtured.

Positive Aspects of ASIAD

The first and the foremost achievement of the 9th Asiad is the tremendous boost it gave to India's image in the international arena. The country's prestige in the Asian continent has gone up considerably.

The Asian Games have created a new awareness among the people all over the country regarding the importance of sports and games. The games have accelerated the process of the formation of the sports Ministry at the Centre.

For nearly two and a half weeks, people got nothing but sports/news in all the newspapers, on the radio and television. Films Division newsreels on Asiad became very popular. A positive achievement is that the Films Division is now planning to produce full length feature film on the 9th Asian Games. As a commercial venture, they will not only get enough market within the country, but most likely to fetch considerable foreign exchange since many Asian and European countries are eager to buy such feature films.

For quite some years, the Indian sportsmen and women have been handicapped by the non-availability of proper equipment and training facilities. This, in turn, had adversely affected their performance in many international sports meet, especially in the Olympics. Thanks to the Asiad, our sportsmen and women can no longer complain about lack of facilities and equipment. For almost all games and sports, the government has acquired the latest equipment. For the athletes olymperene track is available not only at the Jawaharlal Nehru Stadium in New Delhi, but also at the National Institute of sports, Patiala. For high jumpers and pole vaulters, best landing pits have been acquired. Fibreglass poles have been procurred fod polevaulters. For hockey the astroturf has been laid both at the National Stadium in New Delhi and at the NIS Patiala.

The Indian tourism got a shot in the arm. The Asian Games provided a fine opportunity to project India's image abroad. Nearly 2000 journalists who came to cover the Asian Games could write on various aspects of Indian culture, art etc. Over thirty T.V. crews from different countries came to cover the games. Moreover, the games were telecast live to millions of viewers all over Asia, and that was sufficient to project India to the outside world. Most of the players and officials from abroad stayed back to visit different cities in the country. The hotel Industry is the one, that is much benefited out of the Asian Games. Nearly a dozen five-star hotels have come up in the capital. Now there is no derth of hotel accommodation in Delhi.

The construction of seven fly-overs, widening of over a dozen roads, electrification of ring railway, increase in the number of buses of the DTC fleet etc. have sufficiently made Delhi one of the best capitals in the world. Now there is smooth and fast flow of traffic and less chances for accidents on the Delhi roads.

India can now boast of having some of the world class stadia. The Jawaharlal Nehru Stadium in the Lodhi Estate is a masterpiece by itself. With a seating capicity of 75,000 divided into two tiers, it stands out as a big landmark in the heart of New Delhi and is rated as one of the best in the world. The floodlighting system at the stadium is exactly on the lines of a Montreal Olympics.

The Indraprastha Stadium near Rajghat on the bank of the Jamuna is the third largest in the world. It is considered as an engineering marvel. So also, the Talkatora Swimming Pool which is of Olympic standard. Delhi has now got a world class shooting range in its outskirts as well as one of the finest equestrian cross-country fields. All these facilities give New Delhi—or may I say India—a pride of place in the world of sports. India can now bid for hosting any international sports events, including the Olympics. India is already bidding for the 1992 Olympics. Hosting of international sports events will not only boost India's image, but will be serving as a foreign exchange earner, for the country. ☐

Interest rates need a fresh look

Prof. S. P. Padgaonkar

RECENT FALL in the growth of bank deposits has caused a concern in the banking community. The main cause of it is that interest rates on deposits are lower than those offered by other financial agencies. Public limited companies accept deposits at 15 per cent per annum for a period of three years. Their convertible debentures carry return for 13.5 per cent per annum. Even the Post Office Savings Scheme offers 12 per cent per annum. Also the Unit Trust has revised its dividend upwards to 12.5 per cent per annum. As against this, commercial banks pay only 10 per cent per annum. On deposits for 36 months while returns on other non-bank placements are rising, deposits of the banks continue to yield the same interest rates. Banks say that their services compensate for the lower return on deposits. But this argument does not convince the savers. It seems that the banks have reached the saturation point in attracting more funds by any means. Can the banks raise interest rates on deposits and survive themselves from the competition from the non-banking sector?

Banks have no objection to pay 12 per cent on 36 months' deposit, provided they are allowed to increase loan rates from 19.5 to 21 per cent per annum. This would certainly be a crushing burden on industry and trade. It is probably that public limited companies would raise their deposit rates further to 18 per cent. The race beween the banks and non-banks in attracting deposits is unending. Can the business afford to pay borrowing charges above 20 per cent per annum? Can the economy stand the upward pushing of the interest rate structure?

A complex phenomenon

The rate of interest is very much a complex phenomenon. While it is a reward for the saving effort of the people, it is also the cost to the users of the investible funds. Had there been a continued price stability, the real factors like a sacrifice in postponing the present consumption and the productivity on the capital would have ruled the level and the structure of interest rates. The reality is just the opposite. Inflation has changed the rules of the game. The recent rate of increase in the price level creates expectations about the rise in the price level in the future. The interest being the money price on the use of the funds, it will be expected to rise along with the price level. The savers would expect to protect the real value of their savings and also the expected rate of real return on savings. The only people who live under money illusion can be blind to the zero or negative return on their savings during the period of inflation. Inflation is such a menace that it adversely affects the distribution of the real incomes. The people who have fixed incomes suffer most.

Pensioners worst affected

Those who live on interest income as their pensions, are affected most when prices rise without the corresponding increase in the interest income. If the savings of the middle income groups are increasingly turning away from the banks to the other non-banks, it is precisely because of the higher rate of return from the latter. But this development is not in the overall interest of the economy. In an economy where the financial market is not properly developed, the funds are diverted from the high priority use to the low priority use by the mechanism of the rates of return. The monopoly element manifested in big public limited companies, in the capital market tries to cause maximum distortions. In the money and capital markets banks should be allowed to compete with other non-bank financial institutions without any restrictions. Or alternatively non-bank financial institutions should be brought under the control of the Reserve Bank of India. Instead if the Government allows the big public limited companies to compete with the banks, then it not only affects the growth of the banks but also encourages misallocation of the scarce investible resources. To end with the competition between the banks and the non-banks what is needed is the elimination of the interest rate war. The interest rate policy needs a second look at it.

The yardstick

What should be the yardstick of fixing the level and the structure of interest rates?

In the circumstances the remedy is not to raise the level of interest rates. Rather a restructuring of the rates on the basis of some priorities is urgently needed. The rapid growth of banking facilities with diversification of banking services, the opening of a number of non-banking financial institutions, the removal of distortions caused by monopoly elements in the financial markets, the channelisation of the people's savings into the priority investments are some of the measures which are called for along with the rationalisation of the interest rate structure. However, the level of interest rate i.e. the average, must reflect the prospective rate of return on capital investment.

Rural reconstruction in Andhra Pradesh

V. Sripati Rao

A SEMINAR ON RURAL RECONSTRUCTION in Andhra Pradesh was held on 23rd August 1982, at Hyderabad. It was organised by the Prakasam Institute of Development Studies, Hyderabad in collaboration with ICSSR branch Southern Region Center and the Public Relations Society of India, A. P. Chapter. The Seminar attracted a number of personalities both from government agencies and public life. In addition there were a number of academicians from Osmania University, Hyderabad and Kakateeya University, Warangal. The Seminar was held on the occasion of the 111th birthday of Parakasam, which was declared as 'GRAM SWARAJ' day by the government of Andhra Pradesh. The Seminar was inaugurated by Shri P. Venkat Rao, Minister for Marketing and Rural Development, Government of A. P. It was presided over by Prof. G. Ram Reddy, Vice-Chancellor of Osmania University, Hyderabad.

The subject was discussed in depth by the participating speakers, academicians and the connected media men. The seminar was conducted in three sessions : (1) the Socio-Economic aspects (2) Banking on Financial aspects, and finally the (3) Minimum needs strategy and Mass Media. All the participating members, including invitees and media men discussed the issues and arrived at consensus. Prof. B. C. Mathayya, Director-General, National Institution of Rural Development (NIRD) was the Director of Seminar. Following are some of the major suggestions made by the speakers while presenting their papers at the seminar.

Dr. Hargopal, Director, Centre for Economic and Social Studies in his paper stressed a number of problems encountered by the people of the third world and attributedd them to the failure of many of the governments to tackle effectively the problem of poverty. Shri D. K. Murthy, Advisor, Rural Development (IDL Chemicals) in his paper defines rural reconstruction as a process aimed at the well-being of the people who live in villages. Unfortunately ignorance of local realities by bureaucracy and again in failing to identify the "felt needs" of the people resulted in widening the gap between percept and practice. Thus the programme remained a more government programme.

Dr. V. Sivalinga Prasad, presenting a paper on Panchayats and Rural Development, observes that the two decades of experience of working of gram panchayats in our country has not been very healthy and encouraging. In theory the panchayats are expected to generate development from below, but the elite at the village level always thought that development flows from above. They constantly looked to the leaders and institutions at higher levels for aid and grants. This has made the development from below a shallow slogan.

Dr. P. Yadagiri of Osmania University, has referred to Food-for-work programme. This programme prevented the labour from being exploited by the unscrupulous merchants and petty shopkeepers. But it has failed because the schemes and programmes were not carefully worked out and implemented.

Dr. Ch. Balaramulu of Kakateeya University, Warangal, presented a paper on SFDA and Agricultural labour. The SFDA has failed to a great extent in A. P. The only way to make SFDA a success depends on taking proper and adequate steps, imaginative planning and committed political will and proper administrative system in improving its performance.

Many other experts in various aspects of rural development presented their papers.

All-out effort to boost rabi production

THE centre has asked the States to break their Rabi production targets of various foodgrains, pulses and oilseeds into district, block and village targets and fix responsibility of individuals for achieving these targets. The States have also been asked to fully involve the district magistrates and the block staff in the Rabi campaign.

These suggestions are part of a list of sixteen check points for the Rabi campaign 1982-83 sent by the Union Agriculture Secretary Shri S. P. Mukherji to the Chief Secretaries and Agriculture Production Commissioners of the major Rabi-producing States.

The States have been requested to take immediate steps to ensure timely delivery of inputs like fertilisers, weedicides and pesticides at farm level, adequate availability of irrigation water through canals, 10-hour uninterrupted supply of electricity and diesel for operating pump-sets and adequate and timely plant protection cover for arhar, gram and mustard crops.

Among the other steps suggested to the States as part of the check points for the campaign are intensification of major, medium and minor irrigation works, mounting a campaign for utilising every drop of water in the commands of irrigation system and mobilisation of adequate credit facilities through co-operatives and commercial banks. ☐

FAI Award for PAU Scientist

Dr. D. S. Rana, Soil Scientist in the Department of Soils of the Punjab Agricultural University has won the prestigeous FAI Silver Jubilee Award of the Fertilizers Association of India for the best research work done for the year 1982-83. His subject of study was 'Efficient use of Fertilizers in Multiple Cropping Systems". This award carries a cash prize of Rs. 5000 in addition to a gold medal and citation.

Books

Economic and Industrial Guide of India

Kothari's Economic and Industrial guide of India-34th Edition; Published by Kothari and Sons, Kothari Buildings, Nungambakkam High Road, Madras-600034; Pages-2500, Price Rs. 295.

THIS IS THE 34th Edition of Kothari's Economic and Industrial Guide of India published since 1936 by Kothari and Sons, who have been the fore-runners in bringing out industrial and business publications especially on the working of Joint Stock Companies in India. The present Edition of the Guide is an imposing 2,500 page Directory detailing all that is relevant on the Indian Corporate Sector. It is an improvement over previous Editions of the Guide. They have added analyses of more than 200 new Companies and have greatly updated information on several Companies about which only scanty information was provided in earlier Editions due to paucity of data. A new Section on Tourism apart from vastly expanding the Sections on Banks and Allied Institutions, Cement, Chemicals and Pharmaceuticals, Electricity, Engineering, Jute, Minerals and Metals, Paper, Plantation, Sugar, Textile, Transport and Vegetable Oils, has been added.

Additionally, for the first time, the Edition presents a lot of information which will be extremely useful to business economists, academic researchers, students of Indian Corporate Sector and entrepreneurs and to those industrialists and business executives, who may wish to analyse the working of peer group companies or investors who may need a lot of data before committing their funds in ventures they know very little about. Banks and Financial Institutions have an avalanche of information in the Guide that will enable them in their decision-making with regard to lending of their funds.

The General Review Section in this Edition is a vastly improved one and records the performance of the Indian Economy in 1981-82 and forecasts the economy's performance for 1982-83. The General Information Section also has a very detailed analysis of India's Five Year Plans and the growth in various sectors of production. A Chapter on the Industrial Policy of India provides all the changes that have been brought about in the Government's Licensing Policy since Independence besides giving an insight into the highlights of the new policy announced recently by the Government of India.

A Chapter on the Facilities and Incentives given by various State Governments and the Union Governments to entrepreneurs wishing to start industries which come under their respective jurisdiction is added in the edition. A section of Indian Joint ventures abroad has also been added. A Statistical Profile of India is an invaluable addition which any student of Indian industry and economy will find most informative. To make the book more useful and purposeful, two more Chapters have been added to the General Information Section—Procedures on Formation of a Joint Stock Company and the mechanics involved in the Analysis and interpretation of Financial Statements.

The 34th Edition of the Guide is a tremendously usefulwork and this Magnum opus is an irresistible addition to any Library that boasts of authentic works of reference and study on Indian Industry in particular and Indian Economy in general.

R. R. Rao

President Speaks

Speeches of President Sanjiva Reddy, Vol. 1; Publications Division, Ministry of Information & Broadcasting; New Delhi; PP. 301; Price Rs. 46.

PUBLICATIONS DIVISION has an invulnerable record of publishing speeches of Presidents and Prime Ministers of the Indian Republic who adorned the national scene from time to time since the dawn of independence. Significantly, it has been fortunate for India to have as her Presidents not only patriots who played commendable role in the struggle for freedom but also men of learning and social scientist of lowering stature.

Consistent with its functional endeavour over the years, the publisher has brought the first volume of the speeches of our erstwhile President covering the period from July 25, 1977 to December 1979. The volume encompasses his addresses on different occasions on National Affairs, Economic Developments, Social Welfare, Education, Mass-media, India and the World, Science and Technology, Art and Culture, Miscellaneous and Tributes.

President Neelam Sanjiva Reddy being a dignitary of great erudition on a wide range of subjects, naturally his speeches are replete with profound knowledge and extraordinary sense of proportion. Through the arches of experience whatever he keenly observed and felt, as an individual, finds balanced expression in his speeches, befitting the august office he held. By virtue of his command over English language he had carved out a chiselled style which endowed his writings with a readability of charts and precise order.

This volume is a welcome addition to our national realm of letters. It has been well produced with a stout get-up for a price so moderate.

R. Prakash

Labour Year Book

Bharat Labour Year Book (1981-82) compiled and edited by: S|S H. D. Pathak, Som Dev, D. N. Dube and S. D. Dwivedi; Distributors: Central News Agency, New Delhi: pp. 125; Price Rs. 30.

INTRINSICALLY, the volume is not so tiny as it looks, in asmuch as it has been skilfully complied, precisely to include information, inter alia, on topics like Brief History of Labour Movement in India, Growth of International Labour Movement, I.L.O. Census of Workers and Non-workers for 1981, A Keleidescopic view of Activities in 1981-82, supplemented by chunks of description relevant to structure and functions of Labour Ministry, CTUO, Labour Acts and Statistical Tables.

The material in between the lines affords in consolidated from the ingredients of guide to the labour in India, its significance, its problems and the various phases of development schemes and processes affecting its welfare, betterment and future hopes. The efficacy of the contexts is no doubt enhanced by explanatory notes on Labour Acts, a glimpse of the Sixth Plan with regard to the income policy included therein.

As a yearly compilation devoted to "labour journalism" its role as a communicative media for the cause of the labour calls for further improvements which as sensible readership will not fail to suggest depending upon the readability which the volume commands.

For its simple get up and ordinary print, perhaps the price is on the higher side.

Rashmi Khurana.

Renovation of tanks under drought relief programmes

TO combat the prevailing drought situation in West Bengal, the State Government has recently taken up an urgent project to create additional irrigational capacity in all districts of this state. The State has allotted the total sum of Rs. 5 crores for the project of re-excavation of Khas and Vested tanks, excavation of new tanks on Khas and Vested lands and also for renovation of tanks under private ownership. The scheme will provide local employment in drought-prone areas, as for executing the schemes, only local labour will be employed.

Record Ammonia production at NFL Nangal

THE Nangal Unit of the National Fertilizers Limited has established an all time high production record by producing 26,032 tonnes of Ammonia during the month of November, 1982. This is equivalent to 104.5 per cent of the installed capacity for the month and surpasses the earlier record of 22,524 tonnes during the month of July 1982.

The Unit has also set another record by despatching 3,429 tonnes of CAN and Urea on 29th November, 1982, breaking the earlier despatch record of 2,818 tonnes achieved on 31st March, 1981.

Republic Day Annual Number of

Yojana

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On account of the Annual Number, there will not be any issue dated 16—31 January 1983 and 1—15 February 1983.

(Contd. from cover II)

LAB-TO-LAND PROGRAMME

To commemmorate the golden jubilee of ICAR the Lab-to-Land programme was launched in the middle of 1979. This programme aims at dissemination of agricultural technology covering crop and animal husbandry, fisheries, horticultural crops, sericulture, agriculture, etc. amongst families of small and marginal farmers and landless labourers numbering 49,000. This programme has indeed developed a strong feed-back mechanism between the farmers and the agricultural scientists and brought them nearer to each other.

At present this programme is being implemented by 85 transfer to technology centres comprising 31 ICAR Institutes, 22 agricultural universities, 5 affiliated agricultural colleges and 22 governmental and voluntary agencies.

INVESTMENT

As already mentioned, the Sixth Plan outlay of ICAR is Rs. 340 crores for implementing various plan schemes. On agricultural research and education, the ICAR has spent Rs. 739.61 lakh in 1978-79 as against Rs. 16.26 lakhs in 1947-48. Expenditure on R&D and related S&T activities as percentage of GNP has been for 1976-77, 0.60 per cent as against 0.23 per cent for the year 1958-59

ICAR expenditure on agricultural research and education in the five year plans is as follows:—

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For the First Plan, total outlay was Rs. 2.27 crores; for the Second Plan, it was Rs. 4.01 crores and for the Third Plan, it was Rs. 7.15 crores. For the annual Plans for the years 1966-67, 1967-68 and 1968-69, the total outlay was Rs. 10.67 crores. The total outlay for the Fourth Plan was Rs. 121.74 crores and for the Fifth Plan it was Rs. 256.34 crores and for the Sixth Plan, it is Rs. 340 crores.

ICAR grants for agricultural education for the year 1978-79 was Rs. 14.72 as against Rs. 0.79 crores in 1961-62.

An analysis done by Yale University of USA mentions as follows:—

> **".....while investment in agricultural research has been very small in many parts of India, in relation to other sectors of research, the pay-off from investment on agricultural research in India has been one of the greatest in the world..."**

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YOJANA

27
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NUMBERS

The population pressure, a shadow on growth

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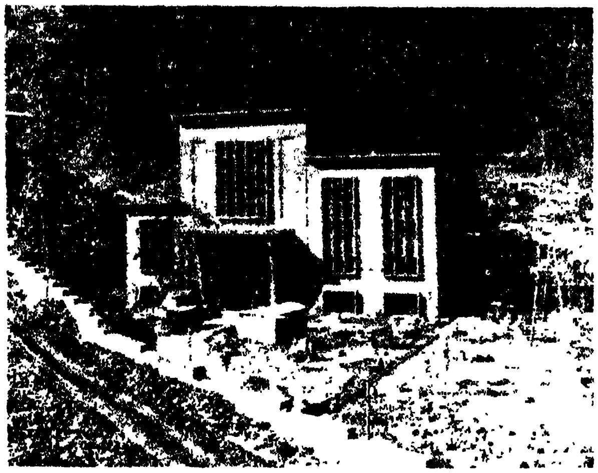
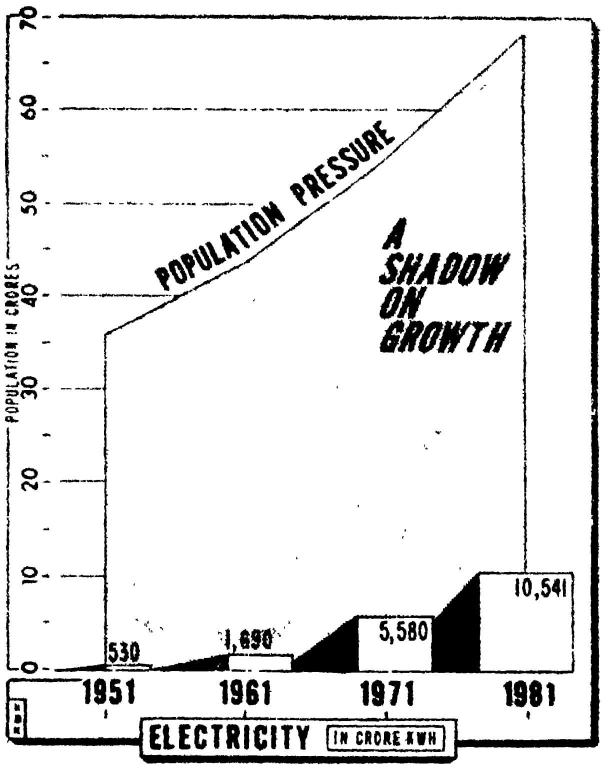
Republic Day Special



A sharp contrast isn't it ?

Let us see the rapid progress registered in the production of electricity. In 1951, about 5300 million KWH of electricity was generated which rose to about 10,5410 million KWH in 1980. More spectacular strides in population growth were witnessed during the same period. We were 360 million about 30 years ago and are now about 685 million. Unfortunately the addition to our power production could not melt away the ever increasing shadows of population. A sharp contrast, indeed !



YOJANA

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Yojana seeks to carry the message of the plan to all sections of the people and promote a more earnest discussion on problems of social and economic development Although published by the Ministry of Information and Broadcasting. Yojana is not restricted to expressing the official point of view Yojana is issued every fortnight in Assamese, Bengali, English, Gujarati, Hindi, Malayalam, Marathi, Tamil, Telugu and Urdu.

Subscription : Inland : One year Rs. 20, Two years Rs. 35, Three years Rs. 50. Foreign : One year $ 6 or $ 3 : Two years $ 10.50 or £ 5.25 : Three years $ 15 or £ 7.50 Single Copy $ 0.30 or £ 0.15.

Population of India some dimensions

As per the census 1981, the population living in rural areas form 76.69 of the total. With 40 per cent of children below 15 years of age, Indian population is young. It is encouraging to note that the proportion of children below 15 has come from 42.02 per cent in 1971 to 38.69 per cent by 1978. The fall in the fertility, as reflected in the birth rates, between 1961 and 1979 is indicative of the benefits of the massive socio-economic programmes which have been implemented and also reflected the success of the family welfare programmes which were launched in mid-60's In fact, the most striking event over the last 80 years has been the decline in mortality from the high land of 40/1000 to 14/1000 currently. There can be little doubt that the massive investments in health, sanitation, water supply and associated sectors have directly contributed to the mitigation in the mortality rates. The infant mortality rate of 127/1000 calls for a little more attention. The rural death rate is nearly 70 per cent higher than the urban death rate and the death rate in the age group 0-4 years is very high. Also about 18 per cent of all deaths are of children below one month and 30 per cent, below one year. The comparatively high attention among infants would influence the decision that individual families, particularly those in rural areas, have to take with regard to the size of their families. These indicate the skewed distribution of basic medical facilities between rural and urban areas. Socio-economic programmes relating to literary improvement, involvement of women in work, improvement in the overall status of women in society and similar sectors are considered important in the context of the long term policy of reduction of fertility.

P. PADMANABHA

THE 1981 census was conducted in February—March 1981 with the sunrise of March 1, 1981 as the reference point of time. The houseless population was enumerated on the night of February 28 and a revisional round was conducted from March 1—5, 1981. In certain inaccessible areas, however, the enumeration was carried out non-synchronously. These areas, include the snow-bound regions of Himachal Pradesh, Uttar Pradesh and Sikkim and certain parts of Andaman and Nicobar Islands where the enumeration was carried out in September—October, 1980. Due to unfavourable weather conditions the census in Jammu and Kashmir was taken between April 20 and May 10, 1981 with sunrise of May 6, 1981 as reference point of time. The census could not be conducted in Assam owing to disturbed conditions prevailing in that State at the time when the census was taken in the rest of the country.

The final population of India, as recorded at the 1981 census, is 685,184,692. This includes the projected population of Assam of 19,896,843. Table 1 indicates India's population at each of the censuses from 1901 onwards.

Table 1

Jopulation, decadal variation India 1901—1981

Census Year	Population	Decadal Variation	Percentage Decade Variation
1	2	3	4
1901 .	238,396,327	..	..
1911 .	252,093,390	+13,697,063	—5.75
1921 .	251,321,213	—772,177	—0.31
1931 .	278,977,238	+27,656,025	+11.00
1941 .	318,660,580	+39,683,342	+14.22
1951 .	361,088,090	+42,420,485	+13.31
1961 .	439,234,771	+77,682,873	+21.51
1971 .	548,159,652	+108,924,881	+24.80
1981 .	685,148,692*	+137,025,040	+25.00

*Includes projected population of Assam.

The decadal growth between 1971 and 1981 is 25.00 per cent. The census of 1971 had April 1, 1971 as the reference date while, as mentioned earlier, in the 1981 census March 1, 1981 was the reference date. If adjustment is made for this difference in reference dates, the decadal growth rate between 1961—71 would be 25.21 per cent. While the decadal growth rate in the last decade is slightly higher than that recorded in the previous decade, it is noticeable that the growth rate has tended to level off. The rapid decadal increases have, hopefully, been curtailed and at least the stabilization of the growth rate attained.

The population of the country continues to be essentially rural in character with 525,457,335 living in the rural areas 159,727,357 living in the urban areas. Of the population of the country 76.69 per cent live in the rural areas.

Population Profile

A more detailed analysis of the population trends would have to await the availability of further data. In particular, the data relating to age distribution would have to be awaited for further analysis of the growth trends. However, based on data available from other sources the profile of the population in its main aspects can be considered in some detail. Among such sources of data are the Sample Registration System which yields essential data relating to vital rates and also provides information at national and state levels of some of the characteristics relating to population.

The population of India is young, with nearly 40 per cent consisting of children below 15 years, as will be seen from Table 2.

Table 2

Distribution of population by broad age-groups

Age group	1971 Males	1971 Females	1971 Persons	1978 Males	1978 Females	1978 Persons
1	2	3	4	5	6	7
0.14	41.86	42.19	42.02	38.84	38.54	38.69
15-59	52.20	51.82	52.01	55.79	55.62	55.71
60+	5.94	5.99	5.97	5.37	5.37	5.60

Thus, out of every 5 persons 2 are below 15 years. Nevertheless, it is encouraging to note that the proportion of children below 15 has fallen from 42.02 per cent in 1971 to 38.69 per cent by 1978. The importance of the age distribution of population in the context of socio-economic programmes, particularly educational programmes, scarcely needs any emphasis. The young population imposes certain constraints in terms of investment decisions relating to socio-economic measures and also favours rapid population growth unless special measures are taken. The decrease in the proportion of the young is, therefore, an encouraging feature.

The age at marriage of women and the proportion married are important aspects. The attempt to raise the age of marriage of girls through legislation and social measures has been a continuous endeavour and these efforts are yielding some results. The age at marriage, which remained almost without change at about 13 years upto 1931, has increased to 17 years. Postponement of age at marriage of women has a clear demographic impact since the general marital fertility rate falls with increasing age at marriage. For example, the general marital fertility rate as recorded in recent studies in the case of girls married at the age below 18 in the rural areas of 170.5 falls below 150 if marriage is postponed to 21 years and over.

While universility of marriage and early marriage for women has been a social feature since long, it is important to note that the proportions of married women in the younger age groups of 10—14 and 15—19 have been decreasing between 1961—71. Among girls in the age group 10—14, 22 per cent in the rural areas and 6.8 per cent in the urban areas were married in 1961 while, by 1971, these proportions had decreased to 13.5 per cent and 3.7 per cent respectively. Similarly, the proportion of married women in the age group 15—19 of 73.7 per cent in the rural areas and 51.6 per cent in the urban areas in 1961 had fallen to 61.0 per cent and 35.9 per cent respectively by 1971. The age at marriage has, therefore, tended to increase.

Fertility and Mortality

In considering population growth and in attempting to evaluate the likely trend of such growth in the future, fertility rates and of the age specific marital fertility rates for 1972 and 1978 are indicated in Table Nos. 3 and 4.

Table 3

Age-specific fertility rates, 1972 and 1978

Age group	Rural 1972	Rural 1978	Urban 1972	Urban 1978
1	2	3	4	5
15-19 . . .	97.5	73.2	52.2	42.8
20-24 . . .	273.5	237.1	220.6	191.4
25-29 . . .	283.4	239.2	247.3	185.0
30-34 . . .	227.4	177.2	173.4	117.0
35-39 . . .	151.2	115.1	108.2	66.9
40-44 . . .	82.7	54.5	43.3	23.9
45-49 . . .	23.7	21.6	13.0	8.3

Table 4

Age-specific marital fertility rates, 1972 and 1978

Age group	Rural 1972	Rural 1978	Urban 1972	Urban 1978
1	2	3	4	5
15-19 . . .	211.5	175.2	220.6	197.3
20-24 . . .	312.9	270.7	312.6	278.4
25-29 . . .	302.8	243.4	284.3	204.2
30-34 . . .	248.8	181.5	201.2	123.9
35-39 . . .	170.1	122.8	123.7	73.4
40-44 . . .	94.5	62.0	52.2	28.3
45-49 . . .	32.4	26.5	15.5	10.5
Total Marital Fertility (TMF) .	6.8	5.4	6.0	4.6

The decline in trends in the age specific fertility rates in both rural and urban areas in all age groups is noticeable. The decline in the age specific fertility rates in the youngest age group is partially due to the increase in the age at marriage and consequent lower proportion of married women. The age specific marital fertility rates show that, in addition to the effect of rise in age at marriage, there has been a real and substantial fall in fertility. The fall in fertility in the age groups 15—19 and 20—24 is of importance.

If these basic facets of the demographic profile are taken into consideration, there is evidence that fertility has declined and continues to do so. However, if the long-term goal of reducing the birth rate from the current level of 33|1000 to 21|1000 by 2000 AD, with the corresonding reduction of the death rate from the current level of 14|1000 to 9|1000 by that year has to be attained, sustained and continuous efforts would be necessary.

The population growth in the country can be said to have been many influenced by fertility and mortality trends, the influence of international migration being comparatively less important. The crude birth and death rates from 1901 onward are indicated in Table 5.

Table 5

Crude birth and death rates, 1901—79

Year	Crude birth rate	Crude death rate
1	2	3
1901-11 . .	49.2	42.6
1911-21 . .	48.1	47.2
1921-31 . .	46.4	36.3
1931-41 . .	45.2	31.2
1941-51 . .	39.9	27.4
1951-61 . .	41.7	22.8
1961-71 . .	41.2	19.0
1971-73 . .	36.3	15.9
1972-74 . .	35.3	15.7
1974-75 . .	34.8	15.3
1974-76 . .	34.4	15.0
1975-77 . .	34.2	15.2
1976-78 . .	33.3	14.5
1977-79 . .	33.1	13.9

The perceptible decline in fertility is apparent. The fall in fertility, as reacted in the birth rates, between 1961 and 1979 is of particular interest and is indicative of the benefits of the massive socio-economic programmes which have been implemented and also reflects the success of the family welfare programmes which were launched from about the mid-60's.

The death rates have also fallen dramatically. In fact, the most striking event over the last 80 years has been the decline in mortality from the high level of 40|1000 to 14|1000 currently. There can be little doubt that the massive investments in health, sanitation, water supply and other associated sectors have directly contributed to the mitigation in the mortality rates. The improvement in mortality is also reflected in the increase in the expectation of life at birth from 32.4 years in the case of males and 31.7 years in the case of females during 1941—50 to 50.8 years and 50.0 years respectively during 1976-77. However, it is the infant mortality rate of 127|1000 while calls for a little more attention. While there has been a steady decline in infant mortality from the level of 219 in the early years of this century to the current level of 127, the reduction of infant mortality would continue to deserve attention.

Initial Medical Facilities

The transition from a high mortality rate to a moderate level over a comparatively short span of about three-quarters of a century is noteworthy in comparison with mortality trends in the developed countries where mortality decline took place over more than a century and a half. While the mortality rate has fallen dramatically, certain aspects call for attention in the context of the policy of reduction in fertility. The rural death rate is nearly 70 per cent higher than the urban death rate and the death rates in the age group 0—4 years are very high. Nearly 47 per cent of the total deaths are attributable to deaths in the age group 0—4 years. In other words, nearly half the total deaths in the country are in this very young age group. There is, therefore, a major component of child mortality in the total mortality in the country. This high level of child mortality has an important bearing on programmes meant to, or which would result in the lowering of general mortality rates in the country. Again, it is significant to note that nearly 18 per cent of all deaths are of children below one month and nearly 30 per cent of all deaths are in the age group below one year. These figures have an important implication with regard to the family planning programme. The comparatively high attribution among infants would influence the decision that individual families, particularly those in rural areas, have to take with regard to the size of their families. In the context of the small family norm of two children, infant mortality, therefore, becomes a major factor. Measures to reduce infant and child mortality acquire significance and importance but it must be noted that the reduction of prenatal and neonatal mortality are far more difficult to reduce than postnatal mortality. The available data indicate that most of the births in the rural areas have very little medical attention and that there exists a sharp differential between the rural and urban areas in the proportion of birth that occur in medical institutions. These differences have implications for policy prescriptions and reflect the skewed distribution of basic medical facilities between rural and urban areas. The public health measures and medical services that would be necessary for achieving a further fall in death rate would have to concentrate on measures relevant to the reduction of infant and child mortality, particularly in the rural areas and to reduction of female mortality in the reproductive ages. The specific sectors that would call for attention in terms of investment decisions would relate to, amongst others nutrition, rural water supply, housing and elementary medical care. The control of diseases which now contribute to a high proportion of deaths in the rural areas would be more difficult than what has been possible in the control of epidemic diseases since the former are dependent upon general health and sanitation and, therefore, are more difficult to mitigate, except through a wide-spread organisational net-work of health services and improvement in basic infrastructure.

Specific action regions

Population growth rates as well as population size are matters of concern in terms of what might be called "quality of life" criteria. While all India data and growth rates are no doubt relevant, given the complexity of the country, it would be necessary to analyse growth rates and population distribution at regional levels. If policy prescriptions have to be effective, one would have to consider population growth rates in terms of broad regions because of wide variations over the country. With increasing availability of census data, it should be possible to identify such regions for determination of specific action programmes relevant to each region. There are identifiable areas where high growth rates will continue to prevail and these would call for specific attention.

Socio-economic programmes relating to literacy improvement, involvement of women in work, improvement in the overall status of women in society and similar sectors are considered important in the context of the long term policy of reduction of fertility. To the extent that improvements in these socio-economic sectors influence fertility behaviour, the need for integrating family welfare programmes with other development programmes, particularly in relation to community participation, must be recognised. Programme activities in these very essential socio-economic sectors can no longer be viewed in isolation since it is almost axiomatic that economic development does, in the long run, bring about a fall in the fertility rate. It is the recognition of these close links that has induced conceptualisation of family planning as more appropriately a programme of family welfare. Two components of the family welfare programme have now come to be recognised. The first would be action programmes in family planning as such, while the second would be the continuing effort to integrate family planning and family welfare programmes in associated sectors of development. The need to consciously build components relating to family planning into programmes relating to socio-economic improvement, therefore, scarcely needs any emphasis. □

China's plan to curb baby boom

CHINA is planning a new campaign to hold down its birth rate following its latest census results.

The preliminary results reported on October 28, showed that the mainland population was 1,008,175,288 as of July 1. This was five million more people than expected. Specialists attributed the increase more to previous statistical error than to an upsurge in births.

The last census, which reported 700 million people, was taken in 1964. Annual tallies since then have been based on the police registration of households, including births and deaths. This resulted in a margin of error of half a per cent.

The 1982 census used five million enumerators and supervisors to track down and interview every family. Computers provided through the United Nations will process the detailed results which will not be available until 1984 or 1985.

The census indicated that the annual growth rate had begun edging back upward from a low of 1.17 per cent in 1979 to 1.45 per cent last year. Annual growth since 1964 has averaged 2.1 per cent.

Qian Xinzhong, the Director of the State Family Planning Commission said at a national conference on family planning that a publicity drive would begin in January to limit the population to 1.2 billion by the year 2000 AD.

Serious problem

He was quoted as having told 120 delegates that, despite "remarkable progress" in holding down the birth rate, "population growth is still a serious problem in our country and birth control is a difficult and urgent task."

The Minister said, "the total number of births is now at its peak" and this would continue for at least a decade. More than half of the population is below the age of 21.

This is the consequence of the baby boom of the 1950s and 1960s, when Mao said China could afford to expand its population.

Since then, the Government has introduced tough controls aimed at restricting families to a single child. An estimated 100 million couples now use contraceptive methods, and 12 million couples have formally pledged to have only one child—New York Times.

A difficult task

China has said it would be difficult to stick to the target of keeping its population below 1.2 billion at the end of the century, Reuter reports from Beijing.

The People's Daily said on Tuesday in an analysis of recent census results that to achieve this, it would be necessary to reduce the population growth rate to 9.95 per cent a year compared with 1.45 per cent in 1981.

This meant a natural population increase of less than 10.4 million a year, compared with an average annual increase of 17 million people since 1964.

"This will be a most difficult task", the official newspaper said.

(The Hindu)

Approach to population control

Family planning should be the primary concern of the people and not of the government. In view of the clear demonstration of the impact of female education on fertility levels the Family Planning Department should announce a new scheme to help all voluntary agencies which focus attention on the schooling of girls in neglected rural areas and launch a special schooling programme for girls on the lines of the special nutrition programme. Education for girls includes the study of text books, physical, health, nutrition environment and population education. If we succeed in inculcating self-help in the field of education and health, two of the greatest felt needs in rural areas, the success of family planning will be ensured. The argument that we cannot wait for literary and education levels to go up because the population is constantly increasing is not valid. Kerala has the highest literacy rate, the highest expectation of life, lowest mortality and infant mortality rates and birth rates. A high average age at marriage has contributed substantially to lowering the birth rate. The human settlement pattern and the mobility of people especially women have also helped in reducing fertility. If the Kerala model can be replicated in other states of India, things will indeed be very encouraging. The new approach, the author says, should shift the responsibility for planned parenthood from the government to individuals and the community. In this process the government should take the initiative and provide the necessary funds, skills and expertise to in the activity by the community at least at the initial stages.

PROF. ASHISH BOSE

WE have been talking about the urgency of population control for the last 30 years, so much so, that any further discussion on the subject may appear like flogging a dead horse. But problem continues to be acute. It is galloping away. The results of the 1981 Census have revealed the full fury of the galloping horse of population growth. It seems to me that a kind of family planning intertia has overtaken the country. One may legitimately ask: why, after so many years of family planning compaign and an ever-expanding family planning programme, there is no significant change in the reproductive behaviour of our masses, especially in the states of Uttar Pradesh, Bihar, Madhya Pradesh and Rajasthan which account for about 40 per cent of India's population? Is there an antidote to despair? Is it possible to think of new approaches to population control?

I do not propose to undertake one more exercise in conventional demography and dole out figures on population growth and economic growth to emphasise the urgency of the population problem. The relevant figures are all available in the Five-Year Plans of India, right from the First to the Sixth Plan.

I would like to begin by referring to the recent Asian and Pacific Population Conference which was organised by the United Nations ESCAP at Colombo in September 1982. This Conference ended with a document called 'Asia's Call for Action'. The recommendations made in regard to family planning were : "Family planning services should be strengthened through (1) involvement of local population and local institutions in planning, funding and implementation of family planning information and services (2) reorientation of programme personnel to make family planning programmes more sensitive and responsive to local values and individual needs, and (3) easy availability and accessibility of family planning services, and information on a continuing basis to potential users."

It is being increasingly realised that a more effective people's involvement is essential for the success of family planning.

People's movement

Because India was the first country to adopt population control as a state policy and because targets for various methods of family planning are set by the Department of Family Planning, both at the centre and in the states, it is taken for granted that family planning is basically the concern of the Department of Family Planning. Family planning is thus viewed as a public sector activity, requiring very little people's participation. This, to my mind, is the greatest danger to the success of the family planning programme. Family planning should be the primary concern of the people and not of the government. In fact, the new 20-point programme emphasises that family planning should be promoted on a voluntary basis as a people's movement.

In many circles, this has been interpreted to mean that more and more funds should be given to voluntary agencies working in the field of family planning. But it seems that there is a deep distrust on the part of the government departments to dole out increasing funds to voluntary agencies on two counts. First, there are not many agencies working in the field of family planning in rural areas and most of these agencies tend to be city-based and elitist. Secondly, the voluntary agencies rely heavily on government funds which goes against the very spirit of voluntary work. On the other hand, the voluntary agencies in the field of family planning have a constant grudge against the authorities. They maintain that the bureaucratic procedure for getting grants are much too cumbersome to permit any innovation in family planning work; and secondly, the yardstick for evaluation of family planning work centres solely round sterilisation, IUD, etc. In short, it is alleged that the spade work which is essential in the initial stages of family planning work in rural areas, finds no place in the government's vocabulary.

There is merit in the arguments put forward on both sides. What then is the way out? I would venture to suggest that the government should have a new approach to the problem of population control through the promotion and mobilisation of voluntary effort in rural areas. It is true that today there are not many worthwhile agencies working in the field of family planning in rural areas. I would suggest that in view of the clear demonstration of the impact of female education on fertility levels, the Family Planning Department should announce a new scheme to help all voluntary agencies which focus attention on the schooling of girls in neglected rural areas and launch a special schooling programme for girls on the lines of the special nutrition programme. It should be understood that education will not only mean the study of standard text-books but will have a heavy dose of physical education, health education, nutrition education, environmental education and population education as a part of the regular school curriculum. Apart from this special schooling programme for girls at least for the next five years, I would suggest the informal education of women through the mobilisation of local talent and resources to generate social awareness among them so that they can take up the challenge of the growing menace of problems like dowry and physical insecurity of women. The new approach should centre round effective participation of the community at the local level. If we succeed in inculcating self-help in the field of education and health—two of the greatest felt needs in rural areas—the success of family planning will be ensured. The argument that we cannot wait for literacy and educational levels to go up because population is constantly increasing is not valid. Neither is the suggested strategy and a droping contraceptives from helicopters. This approach which is popular with some foreign funding agencies reveals colossal ignorance of social reality.

Kerala, best example

At the Colombo Conference, the Sri Lanka model of curbing the birth rate drew great admiration. The country statement for Sri Lanka points out: "Sri Lanka is a rare example of a case where social development seems to have preceded sustained economic development. Thus relative to the nation's per capita income (U.S. $ 265), its level of life expectancy (68 years), infant mortality (37 per thousand live births), birth rate (28 per thousand population) and literacy (87 per cent) are among the best in the world". Incidentally, India's literacy rate is only 36 per cent.

In the international literature, there is considerable interest in the state of Kerala in India which is compared to Sri Lanka. Kerala has the distinction of having the highest literacy rate in India, the highest expectation of life, the lowest mortality and infant mortality rates and the lowest birth rate. If the Kerala model can be replicated in other states of India, things will indeed be very hopeful. One may ask what precisely is the Kerala model? Let me give a few figures for rural Kerala and rural Uttar Pradesh to bring out the contrast. The birth rate in rural Kerala is 27 per thousand, while it is 40 per thousand in rural Uttar Pradesh. The death rate in rural Kerala is 7 per thousand compared to 18 per thousand in rural U.P. The female literacy rate in rural Kerala is 63 per cent as compared to 10 per cent in rural Uttar Pradesh. It has been emphasized time and again that both in Sri Lanka and Kerala, a high average age at marriage has contributed substantially to lowering the birth rate. The human settlement pattern and the mobility of people especially women have also helped in reducing fertility.

The 1981 Census data on marital status are not yet available. So I shall use 1971 Census data. In the rural areas of Uttar Pradesh in 1971, only 19 per cent of the girls in the age group 15—19 were unmarried while in rural Kerala 80 per cent of the girls in this age group were unmarried. In the next age group, 20—24 years, less than 2 per cent of the girls in the rural areas of U.P. were unmarried compared to Kerala's 30 per cent. According to estimates based on the 1971 Census data, in rural U.P., the mean age at marriage of girls was 15.5 years compared to 21.7 years in rural Kerala.

It has been shown in several demographic studies that the key variables in explaining the inter-state fertility differentials in India are the level of education (not merely literacy but years of schooling) and the age at marriage. On the basis of field data, it has been demonstrated by K. G. Jolly that a combination which is ideal for fertility control is for girls to study at least upto the high school stage and marry after 20. This has a spectacular impact on the fertility level.

Late marriages

At least in the States of Uttar Pradesh, Bihar, Madhya Pradesh and Rajasthan, the basic thrust of the family planning programme for the next five years should be on raising the age at marriage. The propaganda for motivating people to marry their children late must be done by non-governmental agencies through village Panchayats, village health committees, women's organisations, youth organisations as well as other voluntary agencies. It is important to note in this context that the age at marriage will go up only when there are opportunities for higher education and training of women and more importantly, for the employment of women at least on a part-time basis. In other words, the strategy which I am suggesting calls for the combined efforts of voluntary workers and the government. The voluntary workers must take up in a big way the cause of female education and raising age at marriage of girls while the government must provide the necessary facilities for training and employment of women. This strategy will not only reduce the birth rate but will also generate economic growth and social change.

I am not pleading for any dilution in the activities of the Department of Family Planning by way of providing facilities for sterilisation, IUD, distribution of conventional contraceptives etc. but it is a new approach which I am pleading for, which shifts the responsibility for planned parenthood from the government to individuals and the community. In shifting the responsibility, the government should take the initiative and provide the necessary funds, skills and expertise to sustain the activity by the community at least at the initial stages.

Four-fold strategy

To sum up, a dent on the rural birth rate can be made if a four-fold strategy is adopted—namely : (1) Special programme for female education right upto high school level in neglected rural areas with the help of voluntary agencies ; (2) An increase in the age at marriage in rural areas to at least 18 to 20 years for girls and the strict enforcement of the Prevention of Child Marriage Act with the help of voluntary agencies whose main function will be educating parents about the need for raising the age at marriage of girls and boys and inculcating to spirit of responsible parenthood ; (3) Massive support to the Health Guide Scheme in order to realise the goal of Health for All by 2000 A.D. and propagation of family planning by doing the much needed health work in rural areas and thereby establishing the credibility of health guides whose advice on family planning will then be valued by the people ; and (4) Taking innovative steps to generate and mobilise initiative within the local communities through local leadership and talent in order to encourage solid work in the field of health and education in rural areas. This is quite different from doing selective family planning work through voluntary agencies from outside with donations from bleeding hearts in rich countries.

(All India Radio)

Heart patient women can become mothers

WOMEN, suffering from severe cardiovascular diseases, could not hope to become mothers. However, by now more than 50 such women in the Soviet Union have become happy mothers with the help of barotherapy. The method first pioneered by Professor Lydia Vanina of the Moscow Obstetric Clinic is now applied in other clinics also.

Professor Vanina had two women, one of whom was suffering from multiple heart diseases and the other from Fallot Tetralogy. Both were nursing a strong desire to give birth to healthy and normal children. But the doctor knew that a diseased heart could not supply enough blood to women's organism and foetus.

She treated the delivery 'problem' of the two women in a pressure chamber. A marked improvement in the patients' general state took place within 20 minutes. Rosy colour came back to their cheeks and lips and the shortness of their breathing decreased. Their organism permeated with oxygen, could stand better to an inevitable strain of child-birth. As a result, two normal, rosy babies without any trace of oxygen deficiency were delivered. Both the mothers even fared far better in the post-natal period. No serious complication or aggravation in cardiac conditions were observed after the child-birth.

In 1975, the Soviet State established the world's largest baro-hospital. The new method complements the existing ones, but in many cases it is decisive in achieving success. Today, it is used in more than 70 cities of the USSR. The Moscow Baro Centre alone has staged 70,000 hypertherapy demonstrations.

(Soviet Features)

Population debate dimensions and prospects

By the turn of the century Indian population may be around one billion. This will pose a problem to our planners. The programme to reduce the rate of growth of population is being interwoven with other developmental plans such as maternity and child health, increasing the marriage age, raising the status of women and linking with the 20-point programme. By 2000 AD we hope to achieve infant mortality below 60, maternal mortality below 2, death rate 9, life expectation at birth 64 years, birth rate 21, pregnant women receiving anti-natal care 100 per cent and ummuinisation services available to 100 per cent of eligible couples. India has the strategy, sufficiently experienced persons, infrastructure, adequate resources and above all, political commitment to persue the programme vigorously. The author says that the main pathway for action was to mobilise available knowledge and skills and implement the programme as people's programme.

B. L. RAINA

THROUGHOUT history human beings have indulged in variations of self improvement and self distruction. No doubt human beings have been trying to improve the quality of life. Their efforts do not show uniform progress. There were ups and downs, developments and disintegrations. Several civilisations can be readily identified which flourished but now are of archaeological interest. The level of science and technology today are unprecedented in history. The level of living in developed countries was never so high. But peace in the world was never so elusive as now. In the psychological evolutionary process there appears to be three milestones. The first when sub-human became human. The second is when human adopted the scientific approach rational morality and consciousness of human dignity and freedom. The third appears to be realisation of the need for ecological adjustment, world interdependence and neighbourliness, equatable sharing of resources and reassessment of human values and goals. The journey from third milestone is at initial stages. It is reflected in the world-wide interest in environmental and population issues, in efforts within a country and the world community to achieve a social and economic order in which disparities disappear and resources are equally shared. How soon the efforts in this direction will be realised? This is a crucial question. It is not uncommon to deal with difficult problems by pretending that the danger does not exist or it will pass away. There is generally a tendency to avoid looking at facts when they are painful. The major theme of the discussion in this article is population. The population issues are inseparable part of various challenges in the country and the world.

In the following discussion reference is made briefly to the world population situation, the Indian scene and a basic single challenge—the crisis of values.

World situation : 5 million to 6 billion

About the time the hunter and food gatherer in Attrapakum (near Madras) was honing his stone tools, there were perhaps about 5 million people like him scattered specialy round the world. This was about 6000 B.C. Faced by cruel death rates especially amongst their children they managed to have equally (perhaps marginally higher) high birth rates for their very survival. (similar situation seems to appear even today in small tribal communities like the Onge, the Jarwa, the Andamanese, Birhor of Bihar and the Arandam of Kerala who are in pre-farming stage). Profound changes occurred in succeeding mellenia. Some control over the environment was achieved. The nomadic life was replaced by settled life. This revolutionised the diet, customs, social organisation, values and quality of life. With ability to grow food, fight diseases, famine, and natural calamities, to think rationally establishing communications and to live in organised society, death rates declined. The population of the world grew slowly to begin with and then rapidly. It took thousands of years for the world to reach the level of one billion around 1850 A.D. The population rose from one billion to two billion in 80 years. (1850—1930), and in 40 years to 3.6 billion (1930--1970). Declining mortality, continued high fertility, low age at marriage, young population, rapidly growing numbers of women in or about to enter child bearing age account for such a situation.

According to UN Long-range global projections based on data assessed in 1978 the world population in the year 2000 will be 6.2 billion. The future increase in population will be almost entirely in the less developed countries. Recently fertility decline has been reported in less-developed countries.

The alternative projections for the year 2100 ranges from 8 billion to as high as 14 billion. Whether the population will be 8 billion or any where between 8 and 14 billion will be influenced by future development in the area of fertility, mortality, development plans, the manner of dealing with human rights and dignity, cultural and ecological issues, production efficiency and population policies. By 2100 people over 65 years may be 18 per cent of the total population. The working age population will be considerable until 2050. Situation as projected above underlines the crucial role of population policies.

We have observed recently declining trend in fertility in developing countries. The debatable issue is the role of family planning programme in this trend. A very close relationship has been observed between fertility and age at marriage, education and status of women, mortality especially infant mortality, and other supporting strategies like increasing employment, meeting basic needs reducing inequalities in income, wealth, raising productivity, poverty. There is virtually a 'seamless web' in which reproductive behaviour operates. A quantitative analysis referred in World Development Report, 1980 suggests that the socio-economic factors (such as incomes, literacy and life expectancy) accounted for as much as 60 per cent of the variation in fertility changes among developing countries from 1960 to 1977. The strength of family planning programme explained another 15 per cent. The strength of the family planning programmes is influenced substantially by socio-economic factors (which accounted for three quarters of the variation).

Indian Scene : 100 million to 1 billion

A conjecture puts India's population as 100 million at the beginning of the Christian era. Not much is known about the population situation for the first 1600 years. By 1871 the population may have been around 255 million. As the death rates started declining, the population growth rates steadily increased. The population of about 361 million was recorded in1951. The 1981 Census enumerated about 684 million people. The actual population of India may be higher, may be 700 million or more. It is observed that since Independence, average growth rates (per cent) during successive decades were increasing. The 1981 Census growth rate was almost the same as in 1971. It appears that the rate of growth has been halted. Padmanabha the Registrar General has drawn attention to the percentage variation of population growth rates in the decade 1971—81 over the rates in the decade 1961—71. Nineteen States and Union territories show slowing down growth rates. 'Among the major States those with slowing growth rates are Kerala, Tamil Nadu and Orissa' (-27.73, -22.74, -21.28 per cent respectively). 'In the major States of Assam, Bihar, Punjab, Andhra Pradesh, Karnataka, Rajasthan and Uttar Pradesh there is increase in this variation ranging from +28.87 in Uttar Pradesh to +3.26 in Assam). Hasty conclusions may not be drawn from this decrease or increase. Further probe is required. If the downward trend in Kerala, Tamil Nadu and Orissa reflects the future trend in the rest of the country, the picture is reassuring. From programme planning, these variations and factors associated with these variation need special attention. Further examination in depth and full results of 1981 Census will enable to draw more realist picture. For programme planning it will be also useful to look into the variations not only at State level but also at district and lower levels.

Assuming that slowing down of the growth rate has taken place, it will be seen that the slowing has taken place in 49.68 per cent population of the country. This leaves 50.32 per cent of population showing increase in the growth rates.

There are several unfavourable factors such as high mortality rates especially infant, mortality. In Uttar Pradesh in 1978 death rates per 1000 population was 20 as against 7 in Kerala and in 1976 infant mortality per 1000 births in Uttar Pradesh was 178, as against 56 in Kerala. The increase in literacy in the country in 1981 over 1971 has been of the low order. Rate of increase in employment of women is disappointing. It is reported that in some industries employers are reluctant to employ women. The age at marriage continues to be low. Child labour continues to be extensively used.

Considering both favourable and unfavourable factors projected Indian population in the year 2000 may be around one billion or perhaps 97.5 million, as projected by the World Bank estimate given in World Development Report 1981. It is well to remember that the number of persons who will join the workforce in 2000 are already born. After 2000 that stresses will greatly increase which can be influenced by the population policy and its implementation now.

Prime Minister Shrimati Indira Gandhi has publicly reiterated government's total commitment to voluntary family planning, and emphasised that 'family planning must become a people's movement —of the people, by the people, for the people'...... she has also stated that 'family planning should be the centre of planned development' and that the Sixth Plan has earmarked over Rs. 10,000 million for family planning, which is funded entirely by the Central Government. 'Lack of resources is not a constraint'. The firm resolve and commitment at the highest level are obvious.

The available evidence indicates that the programme is being interwoven with other development plans such as health especially maternal and child, increasing age at marriage, status of women and linkages with 20 point and other development programmes. The population policy is viewed in broad perspective of improving quality of life.

Besides giving importance to reduction in fertility, the reduction in mortality especially infant mortality is being given importance. The objectives reported to are to be achieved by the year 2000 are; infant mortality below 60, maternal mortality below 2, death date 9, expectation of life at birth 64 years, birth rate 21, pregnant women receiving antinatal care 100 per cent, immunisation services available to 100 per cent of eligible population. These are to be achieved in phases e.g. birth rate of 33.2 (1978) is to be reduced to 29.5 in 1985, 27.0 in 1990 and 21.0 by 2000. In terms of Net Reproduction Rate (NRR), the rate of 1.51 in 1980-81 is to be reduced to 1.34 in 1985, 1.17 in 1990 and 1 by 2000. The NRR 1 implies that child bearing women on the average bear only enough daughters to replace themselves. Population continues to grow after reaching NRR 1 because the past higher birth rate will have produced relatively high proportion of women in or still to enter reproductive age. After reaching NRR I, it will be some years before stationary population is achieved and growth rate is zero. The law relating to age at marriage (18 years for girls and 20 years for boys) is proposed to be vigorously persued.

The number of eligible couples protected is about 23 per cent. There are variations e.g. percentage protected in Maharashtra is about 36 and in U.P. 12. The level of protection of eligible couples will have to be raised to 60—70 per cent to achieve the birth rate|NRR objectives. This will be a tremendous task and will require participation of non-governmental organisations in the implementation of the programme on a very large scale. The objectives on the whole appear to be ambitious. Many seriously doubt with good reason the capacity of State like Uttar Pradesh to achieve the objectives, where not only levels of mortality fertility education of women, age at marriage etc. are very unfavourable but infrastructure to deliver the services is reported to be weak.

While taking note of unfavourable factors, favourable aspects must not be overlooked. They are often blurred by vociferous statements like family planning programme has flopped. We have come a long way since the programme started. We should recognise the fact that percentage change in birth rates during 1960—79 was 23.1 (World Development Report 1981). This has been the highest reduction amongst low income countries except China. It is also reported that 37 million births have been everted, in a decade. Certainly more could have been achieved. There is also evidence that birth rates can be reduced before socio-economic development. There are examples in other countries in support of this view. In India Athoor Block birth rate was brought down to 26 per 1000 population in 1976. The strategy was that in every hamlet and village there were village leaders women and men whether with little education, good education or no education. Auxilliary nurses, midwives were deeply involved. So were village panchayat members. Kerala is another well known example, where birth rates and death rates were nearly 28 and 8 respectively by 1975. In case of Kerala the age at marriage, education of women matriarchal tradition giving high status to women were influential factors. But programme seemed to have appreciable influence. Time is running out. While as a long term measure efforts must be made to accelerate socio-economic development, but immediate steps are abousely requested for direct intervention to reduce fertility through family planning progarmme and to reduce mortality especially infant mortality. Stakes are high. The World Bank projection puts the figure of 1621 million people in India in 2115 when the population is expected to be stationary.

Assumed Year of reaching NRR one is 2020

If the pace of family planning programme and other development programmes which influence fertility are so accelerated that India achieves stationary population ten years earlier than projected it will mean reducing the stationary population by about almost the population of U.S.A. On the other hand it the present pace continues or deteriorates we will remain in the vicious circle of high fertility and poverty.

Strategies to moderate fertility are available in sufficient numbers. Experienced persons in various disciplines are available in the country. Infrastructure is available which can be readily strengthened. Assurance has been given that required resources will be available. There is political commitment to persue the programme vigorously. The main pathway for action is to mobilise available knowledge and skills and implement the programme as people's programme. Not only each State should be associated in choosing the paths to achieve the different targets, but also each village. Athoor Block experience is invaluable in this direction in fact targets should be formulated periphery upwards. A cadre of volunteers with task forces for specific tasks could be formed. Among these task forces an important task force should be on creating social climate to increase age of marriage two to three years above the statutory provision of women and no promote education and employment of women. There is need for rapid improvement of organisational, managerial, logistical, delivery of services upgrading efficiency and performance at all levels and strengthening linkages. This is an area in which immediate action is possible. Sufficient knowledge is not yet available on integration of population policy with development. This can be one of the important area of multi-disciplinary research. Rapid implementation will require improvement in information system and periodical review of progress in family planning programme and programmes which influence fertility. This periodical review should be at various levels periphery upwards including highest level in the State and Highest level in the Centre. Action in this direction is reported to have been taken.

Some of the areas which require greater attention than at present are redeployment and distribution of the population, human population genetics and ageing. The problem of redeployment and distribution of the population is complex. Major cities are growing very fast. By 2000 the population of Calcutta and Bombay are estimated to be 16 and 17 million respectively. United Nations estimate puts 60 per cent urban growth due to natural increase and 40 per cent to migration in developing countries. Population distribution however complex is bound to become a major challenge to development and there is need for appropriate strategy to meet the challenge. Such a strategy need not necessarily be against urbanisation, which is an ingredient of modernising process.

Regarding human population genetics, it may be recalled that for every 100 live born 6 suffer from genetic diseases. In some ethnic groups and areas disorders of genetic origin is very high. Consanguinity (cousin, uncle-niece marriages) is common in many ethnic groups. High frequency of congenital malformation, mental disorders and reproductive wastage are closely related to in-breeding. Environmental polluants, food addivites and drugs have added new dimensions, and monitoring of such agents which increase mutation are essential. As communicable diseases are controlled the incidence of genetic disorders increases. Human population genetics should be given a place in primary health care and population policy.

In respect of ageing, reference has already been made to increase in the number people above 65 years. It is well established that old age security is a determinant in having large number of children especially sons. A deeper look is required in the projected number of aged in different parts of the country and measures for their social and economic security.

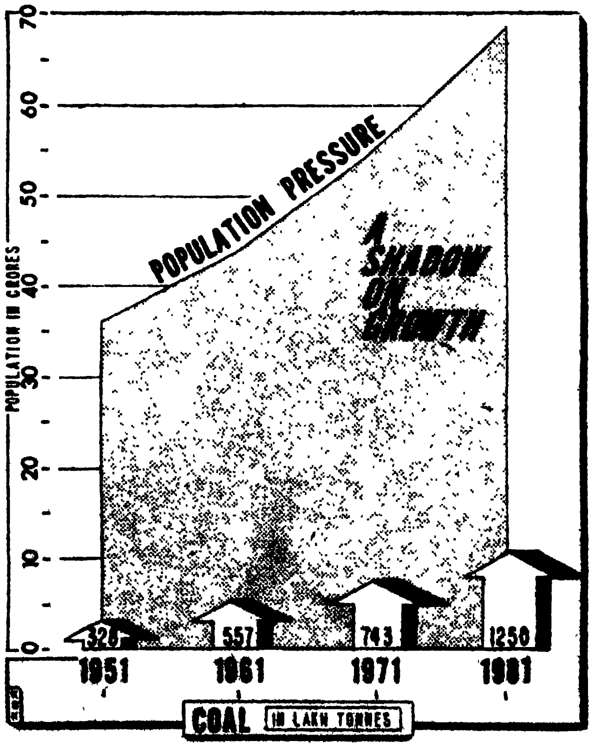
A Crisis of Values

We may revert to historical experience of human beings indulging in improvement and self distruction. The potential for self distruction are apparent in the world. The challenges are many at various levels individual, family, national and international. The wide disparities and diversity in accessibility to available resources within a Nation and between Nations continue. For the poor it is not the question of quality of life but sustaining life itself. The principles of equity and social justice are loudly proclaimed. Yet effective emergence of new social and economic order is not yet in sight. One of the new factors that has emerged recently is that for the first time man has virtual power to destroy the whole human race. If this power is exercised the discussion on population issues becomes meaningless. The numerous challenges basically resolve into single challenge, the challenge of reassessment of our present values and changing our values. Pessimistic projections for the future are made sometime. The very fact that various dangers including explosive population growth have been recognised and efforts to solve them have been initiated should dispel pessimism. Human beings over centuries despite ups and downs have not only survived but have shown great ecological adjustment and attained a high level of development through rational and scientific approach and hard work. We need not subscribe to the prophets of doom. There is capacity in India to stabilise the population earlier than projected. Then we should not get ruffled. We should calmly accept that Indian population by the year 2000 will be about one billion, and make every possible effort to reach stationary population earlier than World Bank projection. The enduring success will depend on keeping focus on human values, on peoples participation, on dedication of workers, on persistent hard work and vigorous action, on appreciation of interaction of various factors, on accepting people as intelligent individuals and on recognising that discussions are more productive than telling people what to do. ☐

Handbook on population education for workers

The Central Board for Workers Education has brought out handbook on 'Population Education for Workers' to be used as educational and motivational material on population education for workers in the organised sector.

The book has three levels and brought out under the United Nations Fund for Population Activities (UNFPA), International Labour Organisation project on curriculum development and teaching aids on population education and family planning by the Board.



Checking population pressure in India

The credit for providing family planning advice and services at official level for the first time goes to the then Mysore state, where two government-sponsored family planning clinics were set up over 50 years ago. Till recent past the family planning programme had been largely concerned with the reduction in crude birth and crude death rates. In a country where a large section of the people are illiterate and superstitious, one has to approach a sensitive subject like family planning with caution. The people have to be motivated and an environment conducive to be created. This cannot be done by the government alone. To make the people accept the programme, the leaders of the community were involved by establishing Indian Association of Parliamentarians on Population and Development. The Association has succeeded in creating an environment of political consensus in favour of the family planning by involving leaders of public opinion cutting across party lines. Next comes the question of the incentives and disincentives. The author says that without an element of disincentives which has been accepted by the world community as an essential component, it might be difficult to achieve the stupendous task before us.

SAT PAUL MITTAL

THE need for controlling the population explosion in our country is greater now than ever before. The reason for this in the starting revelation from the 1981 census that the rate of growth of population is too fast to be matched by the rate of economic development. As a result of this mismatch between the rate of economic development and the rate of growth of population whatever gains are made from development projects will be neutralised by the increased demand from the growing population. It is against this background that there has been a fresh awareness of the need to spare no efforts to contain the growth of population within manageable limits.

The concept of small family is not new in our country. The credit for providing family planning advice and services at official level for the first time goes to the state of Mysore, where two Government-sponsored family planning clinics were set up over fifty years ago.

After independence, family planning has been given a central place in our economic development plans. Health care and welfare of mothers and children was acknowledged as a catalyst and corollary of development efforts.

The family planning programme in the country in the past has been largely concerned with the reduction in crude birth and crude death rates as fast as possible because this is the most important first step if all other efforts have to bear fruit. However, many of the objects for reduction in birth rates set in the past have not been achieved for various reasons. If the rate of population growth continues in this unabated manner, India's population will touch a thousand million mark by the turn of the century. We shudder to think of the fate of our people and the magnitude of their misery in 2000 AD if the unwieldy population growth is not contained on a war footing.

Targets

We had set the target in 1961 for a reduction in birth rate to 25 per thousand by 1973, but we could only achieve a reduction of birth rate to 33 per thousand. The revised target is to reduce the birth rate to 21 per thousand by 2000 AD. The magnitude of the task involved in achieving this goal can be gauged from the fact that forty per cent of the present population is below the age of 14. This implies that already tomorrow's parents are born and their number will go on increasing even if each of the future parents have only two children. This means population will continue to grow in any case; in other words the number of couples in the reproductive age groups to be covered with contraceptive services will have to be much more than at present. To achieve the target at reduction in birth rate we have to cover atleast 60 per cent of the eligible couples with contraceptive services by 2000 AD compared to the present level of 20 per cent coverage of eligible couples. Are the present policies and programmes adequate to achieve this target? Nobody can take any exception to the basic policy of the government. In fact there has been no two opinions on the need to check the population growth and promote the small family norm. But there have been differences on the methods of achieving this. There has been a view that in a country where a large section of the people are illiterate and steeped in superstition, one has to approach a sensitive subject like family planning with caution. The people have to be motivated and an environment conducive to greater acceptance of family planning have to be created. This cannot be done by the government alone. The reason is simple that the public always look with certain amount of indifference, any programme of family planning which is officially sponsored.

Approach

If the leaders of the community are involved in such programme there is greater chance of its acceptance. It was this realisation that resulted in the formation of Indian Association of Parliamentarians on Population and Development, with a view to supplementing the efforts at official level for the acceptance of the concept of small family and provide the necessary services at the door steps of the people to reduce birth rates. The Association has succeeded in creating an environment of political consensus in favour of family planning by involving leaders of public opinion cutting across party lines. The reiteration by the esteemed Prime Minister, of her Government's total commitment to the voluntary family planning, in the country is abundant proof of the political will which is absolutely essential for the success of the programme. Having achieved this, next step is adoption of effective policies and strategies based on the experience of last three decades. Government has rightly come to the conclusion that the family planning programme has to be based on motivational and promotional approach, instead of being imposed on the people. Apart from education and motivational campaigns the question of incentives and disincentives come to the picture. The incentives have been given for the last two decades. They include monetary compensation to acceptors and motivators. More recently a number of incentives were offered to those working in government sector undertakings.

There has not been much of a controversy over this. But when it comes to the question of disincentives there are differences of opinion. Opposition to disincentives is based on the fear that this will amount to compulsion. In other words there is a feeling that the line between compulsion and disincentives is very thin. But at the same time one cannot dispute that without an element of disincentives which has been accepted by the World Community as an essential component, it may be difficult to achieve the stupendous task before us.

One has to take care that the disincentives are so framed that they do not infringe on the fundamental rights of the people enshrined in our constitution. It is in this context, that the IAPPD has recommended certain types of disincentives which will make the eligible couples go for contraceptive devices without any compulsion or force. This is most essential in rural areas where the level of awareness and acceptance is very low compared to the cities and urban areas.

The following are the incentives and disincentives :

1. Talks between the trade unions and the employees associations do not only convince them about the very concept of incentives and disincentives but also to obtain their approval of the scheme.

2. It is urged that Prime Minister Shrimati Indira Gandhi may call a meeting of the national and regional political parties, industrialists and trade union leaders and religious heads to discuss family planning issues with a view to arriving at minimum national programme of action with special reference to the incentives and disincentives.

3. Cash incentives of Rs. 1000 after two children for undergoing the terminal method and Rs. 250 after three children for the same method. But couples voluntarily opting for one child should not be discouraged and denied benefits of the scheme. They should rather be considered for special benefits.

4. For those employed in public sector and private sector an additional ten per cent for a couple having one child with the terminal method and five per cent to a couple with two children opting for the terminal method.

5. A proposal that all married women employed in public and private sectors have a special saving bank account to which the employer should deposit Rs. 25 each month with usual benefit of interest payable to the employee having children upto two at the end of the child bearing period. Her accounts will be closed as soon as she gets pregnent for the third child and the entire amount will revert back alongwith interest to the employer.

6. Highest priority should be given for allotment of commercial or housing plots or flats to the couples adopting terminal method, after one child. Employees living in rented houses should be given additional house rent allowance at the rate of Rs. 30 a month to couples having one child and Rs. 20 to those having two chilrdren.

7. Three increments to be given to the employees if they offer to go in for the terminal method after the first child; two increments after the second child followed by terminal method and deferent of one increment by six months in respect of an employee having the third child, and for any subsequent births deferment of increment by one year, after the deadline set by the government. It should not have retrospective effect.

8. The choice of posting and transfer should be given to the employees if they undergo the terminal method after the second child. For the leave-travel concession, the family should be deemed to consist of husband, wife and upto two children apart from the dependent parents.

9. One disincentive proposed is in respect of maternity leave. It should be for 120 days for the first child, if followed by terminal method, 90 days for the second child if followed by terminal method and no leave thereafter. The absence may be treated as leave without pay. This should apply to the public and private sectors.

(*Continued on page* 56)

Population problem, a planner's view

What policy should we follow, the carrot or the stick in the family planning programme? According to the author this is a non-issue in our social and political context. We cannot follow a too liberal policy of offering high cash incentives. Free clinical facilities and supply of contraceptives and easier access to clinical services to the poorer sections to whom they were not available till now is a part of the "carrot". However, some selective disincentives for discouraging "improvident parenthood" could be thought of, wherever they can be built into contractual benefits like service conditions of employees of government and organised sector. There should be no question of withdrawing any benefits already available to a family and the approach should be to make the benefits unavailable prospectively to those who exceed the prescribed family norm in future. In essence what we need is a balanced policy of both selective incentives and disincentives to the extent they are consistent with our resources, our plan priority, our democratic fabric, political system and the directive principles of state Policy.

S. B. CHAVAN

THE preliminary findings of the 1981 Census announced last year had generated a lot of interest and debate on the country's demographic situation and population issues. The brunt of the criticism was that our efforts in controlling population growth all these years of planned development had not paid off fully and the family planning programme had made little impact on the problem of population explosion. The discussion on the subject had generally highlighted, what many be called the negative features of the population scenario, either ignoring or taking little notice of the positive achievements to our credit in the last 30 years of planning, our country being the pioneer in the launching of an official family planning programme anywhere in the world and integrating it into the normal planning process.

It is true that our population in March 1981 turned out to 684 millions, overshooting the projected mark by about 12 millions or so and that the annual growth rate for the country as a whole during the decade 1971-81 has remained more or less at the same level of about 22 per cent as in the previous decade. The decennial growth rate during 1971-82 has remained at 24.75 per cent as against 24.80 per cent during 1961-71. It has also to be conceded that our birth rates are still high, even higher by 2 or 3 points at the beginning of the Sixth Plan than what we had assumed. We continue to have a high potential for future population growth since the age composition of the population with an anticipated 40 per cent comprising children is highly tilted towards such growth.

Constant annual growth rate

What has been less obvious and perhaps less publicised is the fact that we have succeeded in breaking the back, so to say, of the increase in the rate of annual growth which has remained at the same level as in the previous decade i.e. 2.2 per cent. Among the major States viz. Kerala, Tamil Nadu, Orissa, West Bengal, Haryana, Madhya Pradesh and Gujarat have registered a significant negative percentage variation of growth rate during the decade, ranging from (—)7.42 to (—)27.73. The death rate is expected to have come down significantly in most of the States while the birth rate has come down in varying degrees depending on the socio-economic milieu of the State and the seriousness with which the family planning programme had been implemented. The percentage decrease in the birth rate and death rate between 1961-71 and 1971-81 (mid-periods) for the whole country have been worked out to be 10.0 per cent and 22.1 per cent respectively by the Registrar General of India. According to the calculations made by the Ministry of Health and Family Welfare (Department of Family Welfare) the Family Planning programme had been able to avert over 49.26 million births upto March 1982. The adverse trend in the sex ratio of women per 1000 men has been halted. Some improvement has been recorded on the literary front which has gone up from 39.45 per cent in 1961-71 to 46.74 per cent in the case of men and from 18.59 per cent to 24.88 per cent in the case of women. We have been able to build up a countrywide health and family welfare infrastructure that is capable of providing advice and diverse services on family planning such as sterilisation, IUD, CC, oral pills, etc. In the rural areas all the CD Blocks covering about 1 lakh population have a rural family welfare centre. A sub-centre each with a trained male multipurpose worker and a trained ANM caters to the needs of about 9—10 thousand population. In the urban areas there are 524 post-partum centres covering all the medical colleges and district hospitals. All the cities and major towns have services of urban family welfare centres available. While some States like Maharashtra, Kerala and Tamil Nadu have reached relatively lower birth and death rates, the position is not as encouraging in other States, particularly in the more populous States like Uttar Pradesh, Bihar, Madhya Pradesh and Rajasthan. The former group of States had made larger investment in the past in the Social Services Sector, particularly Health and Education which have paid them handsome dividends in the form of high literacy rates, low birth and death rates. Drawing from the experience of these States, the so-called backward States also have to give priority to selected programmes in the sphere of education, health and nutrition. It is encouraging that these States have been making larger investments in these sectors under the Minimum Needs Programme in recent years, the results of which would become apparent during the current and next decade. Special schemes for improving the health delivery system in these States have also been drawn up under the Department of Family Welfare's Area programmes. Despite these positive factors there is no room for any complacency and a sustained and intensified campaign against population explosion has to be kept up.

This country has always viewed the population issue in the larger context of economic development although the approach and relative emphasis in successive Five Year Plans had been varying. The Sixth Plan has specifically focused on the relevance of family planning to the larger issues of economic development and considered it as an integral part of development of human resources, as the following extract from the Sixth Plan Document would show :—

> "The Family Planning Programme has also to be made a part of the total national effort for providing a better life to the people. The plan seeks to make a massive attack on the problem of unemployment and poverty through specific programme directed towards the target groups such as small and marginal farmers, rural artisans, landless labourers, women, scheduled castes and scheduled tribes etc. A National Rural Employment programme is being initiated to promote gainful employment to landless labourers and marginal farmers families. Under these programmes the household will remain the basic unit of poverty eradication. Economic emancipation will enable for children from poor families to attend school to receive adequate nutrition and develop into useful citizens. Special attention will be paid to the education and employment of women and to liberate them from dependence and insecurity and unprove their social status".

That is why a high priority had been given in the Sixth Plan for programmes of rural development, eradication of poverty, social and economic upliftment of women etc.

Apart from the economic environment, there are some well-known socio-cultural and religious factors which determine the demographic behaviour of a people, such as age of marriage, level of literacy, women's status, value of and desire for children, preference between sons and daughters etc. State intervention in these areas could only be limited. Greater success could be attained through education and enlightenment of the people than by legislative and regulatory measures, as our experience in the sphere of social legislation in this country has proved. Therefore, our policy had always placed emphasis on voluntary acceptance of family planning based on education, information and communication rather than on coersion. Appropriate policies for educating and enlightening the people on various matters having bearing on fertility have to be combined with other programmes of economic development and provision of required family welfare services so that all these have a synergistic impact on the population problem. Such a well orchestrated programme on the basis of education, persuasion and delivery of services calls for a high order of administrative and managerial skills besides full political support. Such a programme is also time consuming in terms of implementation.

Incentives and disincentives

A matter seriously debated in this country presently is whether we should follow the policy of 'the stick or the carrot' for controlling population growth, which, in other words means whether we should rely on "incentives" or 'disincentives" for bringing about wider acceptance of family planning. This debate, in my view, is a non-issue in our social and political context. Since a major part of our resources are pre-empted for investment in economical productive sectors we cannot follow a too liberal policy of offering "carrots" or high cash incentives although it can be proved by arithmetical calculation that there would be substantial savings in social costs in fields like education, health, housing etc. in the long run by a quick reduction in the population growth rate through such incentives. The Family Planning Programme does not function in a "vacuum". It has to be filled into the national perspective plan and economic priorities. That does not mean that we do not believe in or have no scheme of enabling the poorer sections to avail themselves of the benefit of family planning. Free clinical facilities and supply of contraceptives and easier access to clinical services to the poorer sections to whom they were not available till now is certainly part of the 'carrot' the

State can offer. If free medical and child-care including immunisation of expectant mothers and children against various diseases and of prophylaxis against deficiency diseases are also taken into account, the benefits are quite substantial. Financial incentives are also given to acceptors of sterilisation and IUD to compensate them for the loss of wages sustained on account of absence from work for the few days of hospitalisation and convalescences. However, any incentives that are offered can only be very selective and limited in scope concerning the vast numbers of target couples. As for the policy of the 'stick' or disincentives, there is little room for such a policy in our democratic system based on conviction and compromise. Disincentives in the form of denial of food, clothing and shelter and medical facilities are out of question for non-acceptors of family planning since these form part of the basic human rights and moreover it will cause hardship to poor families which are already deprived. These are really the target groups whose economic base has to be strengthened so that they can adopt family planning voluntarily. Any drastic measures of disincentives could therefore be counter-productive. However, some selective disincentives for discouraging 'improvident parenthood' could be thought of wherever such disincentives can be built into contractual benefits like service conditions of employees of government and organised sector. Here also, there should be no question of withdrawing any benefits already available to a family and the approach should be to make the benefits un-available prospectively to those who exceed the prescribed family norm in future. It should not be forgotten that high fertility rates in this country are largely a legacy of the past as much as poverty and underdevelopment and we can not disturb it too violently to achieve the desired objective in an unreasonably short period. In essence, what we need is a balanced policy of both selective incentives and disincentives to the extent they are consistent with our resources, our plan priorities, our democratic fabric, political system and the Directive Principles of State Policy.

Higher targets and the strategy

It was in the above background that the findings of 1981 Census were reviewed by the Cabinet late in 1981 and certain decisions taken. Keeping in view that the actual population in 1981, had turned out to be larger than anticipated, it has been decided to promote family planning as a peoples' movement and encourage different methods of family planning. The target for sterilisation has been increased from 22 millions to 24 millions in the Sixth Plan, in addition to high targets under other methods already fixed. The objective of the Sixth Plan is to increase the percentage of couple protection from about 22.5 per cent at the beginning of the Plan to about 36.6 per cent by 1985 and to 60 per cent by 1995. Demographers have calculated that, if this is done, the Net Reproduction Rate in the country by 1995 would be reduced to 1 from about 1.5 at the beginning of the Plan. The birth rate is expected to come down to 21 and the death rate of 9 at that stage.

How are we to achieve these ambitious targets is a question that is frequently asked. In the earlier plans vasectomy had been a popular method. In recent years it has yielded prime place to tubectomy which is predominent in the total number of sterilisations accounting for about 80 per cent of sterilisations. The latest techniques of laparascopy and mini-laparascopy have attained considerable popularity even in rural areas, as the procedures are simple and hospitalisation is not required for more than a day. Our present strategy is to cover as many couples as possible by increasing the facilities for sterilisation in the District and taluka hospitals and the primary health centres. The Government have also decided to liberalise the rate of payments to the State Governments on sterilisation, keeping in view the escalation in the cost of drugs, bandages etc. and also POL. Additional funds have also been provided for incentives at higher rates to motivators.

Sterilisation is no doubt the most effective method of family planning both from the point of view of fertility control as well as cost but it can only cover the higher age groups generally with more than two children and the percentage of a effective couple protection cannot be increased significantly unless the younger couples, who are entering into the productive period in larger numbers, are enabled to plan their families through adoption of non-terminal methods like IUD, oral pills and CC. Greater attention will be paid to these methods also in our new strategy. The health and family welfare infrastructure for delivery of these services is being expanded and strengthened. A massive campaign for information, education and communication (IEC) has to be launched. In this context, the Cabinet has decided to accelerate the progress of the Village Health Guides Scheme which will be funded 100 per cent by the Government of India from 1-12-1981. The States have been instructed to give preference to women in the selection of health guides. This is in adddition to Government of India's decision in the Sixth Plan to meet the recurring cost of all new sub-centres set up from 1981-82, the idea being that ANMs based in the sub-centres and health guides drawn from the community in the villages would be able to provide the necessary advice, information and services to a large number of rural couples who do not have access to them at present. A large allocation of Rs. 1078 crores has already been made to the family planning programme in the Sixth Plan and resources will not come in the way of legitimate expenditure to be incurred on achievement of family planning targets.

As is well known, the family planning programme had slid back in the years immediately preceding the first year of the Sixth Plan. The credibility of the programme has been restored through concerted action and keen interest taken in this programme by the Prime Minister herself. The following table will show the targets and achievements in the first three years of the Plan in relation to the performance level reached in 1979-80 :

Statement showing family planning performance in the Sixth Plan.

(In Million)

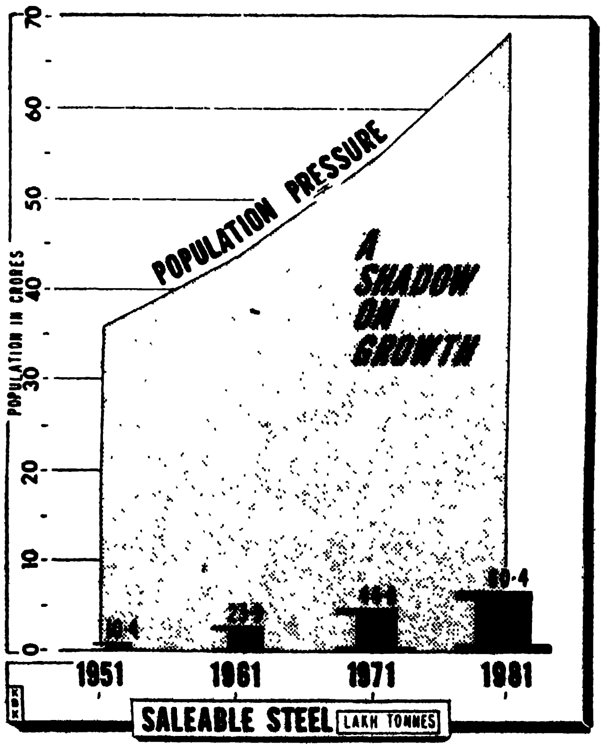
Year	Targets/achievements	Sterilisations	IUDs	Eq. CC and OP users
1979-80	Targets	3.05	1.15	5.50
	Achievement (Base year)	1.78	0.63	3.07
1980-81	Targets	2.90	0.79	5.54
	Achievement	2.05	0.63	3.81
1981-82	Targets	2.90	0.79	5.54
	Achievement	2.79	0.75	4.55
1982-83	Targets	4.53	1.52	7.00
	Achievement (upto October)	1.54	0.48	3.72 (upto September)

Note : Figures are provisional

There are clear indications that the programme is being implemented more seriously now by most of the States since a favourable climate has now been created for it. The performance has gone up by 15 per cent for sterilisation and by 24 per cent for CC and OP users in 1980-81. Over the performance of 1980-81, the performance in 1981-82 went up further by 36 per cent for sterilisation, 19.5 per cent for IUD and 19.5 per cent for CC and OP users. The progress has been maintained in the current year as well. It was higher during April-October 1982 by 35 per cent for sterilisation and 36 per cent for IUDs as compared to the corresponding period of last year. We have still a long way to go in fulfilling the Sixth Plan targets. Special efforts are required to promote conventional contraceptives and oral pills for which the free distribution and commercial programmes are being strengthened. Additional resources will be found for this.

Last year, there was a significant event in the history of family planning in this country which was the meeting in Delhi of Parliamentarians belonging to various parties. This meeting focussed attention on the major population issues, particularly the need for a national consensus on family planning and political support to the programme. This meeting which was addressed by the Prime Minister has given a fillip to the programme which is bound to made further strides in the coming years. The Family Planning Programme has been included in the New 20 Point Programme which seeks to make family planning a people's movement. The Chief Ministers are now taking greater interest in this programme as would be apparent from the results achieved during this year so far. It is expected that legislators in the States would also emulate the Parliamentarians and help to promote the movement. Voluntary organisations which had been hitherto confining their services/activities mainly to the urban areas have also to extend their outreach to the rural areas and spread the message of family planning and deliver the necessary services. The scheme of payment of grants to voluntary organisations has been decentralised and simplified. The Plan has already a programme of training of Opinion Leaders from the villages for propagating the concept of family planning which has to be implemented vigorously. Greater emphasis on mass media and personal communication between extension workers and the rural population has been laid in the Sixth Plan and ways and means are being worked out to make use of all available channels of communication between Government Departments and the people for carrying forward the message of family planning. Population education is also being incorporated in all systems of formal and non-formal education.

Recently the Cabinet has set up a Population Advisory Council under the Chairmanship of the Minister of Health and Family Welfare to act as a "Think Tank" on major population issues, which would not only keep the family planning programme under review, but also advise Government from time to time on various population issues and policies. We await new ideas and suggestions to emerge from the deliberations of the Council. With the steps already initiated, I have no doubt that family planning has come to stay in this country as a fact of life and in the years ahead we can look forward to making a larger dent on the problem of population growth. ☐



Population education for social betterment

By any standard expansion in the field of education at all stages has been phenomenal. In the last 30 years primary education has increased three times, middle school education four times, higher education five times and university level education over six times—the number of universities alone increasing from 19 in 1950 to 118 by 1981. While the number of institutions and the students has expanded beyond measure, the number of illiterates has risen from 386 million in 1971 to 447 million in 1981. So the coming generation must be accorded the opportunity to acquire, in a timely and graded manner and in a stable education atmosphere, a basic understanding of this modern phenomenon of burgeoning human population and the way in which it intervene with the social, economic and political concepts of life, influencing thereby not only the physical standards but the very quality of human living.

SARLA MUKHI

INDIA which is the seventh largest country in the world, has a geographical land area of 3.27 million sq. kilometres. The land frontier in the north extends to 15,168 kms. and the coastline is approximately 5,689 kms.

While the country is rich in natural resources and has developed a remarkable infrastructure for industrial growth within the past 30 years of planned development, the rate of economic growth and even more, the per capita income of the average Indian gives cause for considerable concern.

Part of this problem is due to the high birth rate (approx. 33.3 per thousand) which has brought our population to a staggering 684 million in 1981. For instance, population increase in the decade 1921-31 was 28 million but the decade 1971-81 saw an increase of 136 million.

The medical revolution, control of famine, better distribution systems have since 1921 helped to bring down the death rate from 48.6 to approx. 14.2 per thousand population (1981). No parallel decline has taken place in the birth-rate though there has been a modest decline. The gap between birth rate and death rate however widens.

Since human beings multiply at an exponential rate while goods and services can only expand arithmetically, there is a growing imbalance between population and resources.

Fxpanding economy, best contraceptive

No one would deny that there are several factors tnat contribute to significant population change—and an expanding economy is possibly "the best contraceptive", for bringing down the birth rate. But the rate at which the economy can expand is in both obvious and subtle ways tied up with the rate at which the natural increase of population takes place.

Whatever the economic philosophy one may subscribe to, "wealth" can only expand through increased production. If the consumers of wealth are almost as many as the producers, much of the wealth produced is siphoned off for basic consumption—food, shelter, clothing, as well as for essential services such as education, transport and medical care. Less and less wealth remains for renewed investment. Today, India's young-age population from 0 to 14 years of age accounts for almost 40 per cent of per total population.

Apart from this, since the rate of production of consumer goods and services cannot keep pace with a high rate of population growth, shortage and inflation become a cancer within the economy.

Further, to accelerate the rate of industrial growth so that more production may take place (and more jobs for the growing working force) not only money, but natural resources including land, are required. On a finite planet, there is a limit to these resources—resources such as land cannot be replenished; resources such as trees, live-stock require time for renewal; resources such as certain minerals and mineral products are non-renewable. Thus the triad of men, money, materials which in proper balance spell wealth, can when strongly tited in any one direction, produces imbalances.

Economically active population

India has traditionally been an agricultural country. Since Independence, the Government of India has been committed to the ideal of planned economic development. Through succeeding 5 year plans commencing in 1951-52 the Government has sought to increase productivity in agriculture, establish a strong industrial base, extend mining operations, speed up manufacture of a wide variety of goods with the object of improving the living standards of the people. In absolute terms the expansion has been remarkable—in terms of the benefits percolating to the people the picture assumes a totally different perspective.

Standards of living remain among the lowest in the world although sophisticated technology, heavy industry and skilled technicians who may be favourably compared with their counterparts in the developed world, are to be found in urban centres in India. Meanwhile, poverty seems to grow rather than decline.

While many factors (cultural beliefs, illiterarcy, socio-economic imbalances etc.) contribute to this state of affairs, the number of humans multiplies so rapidly that living standards already low, threaten to go down even further.

Education

A country with 15 per cent literacy in a hundred years of British rule, was committed to the eradication of illiteracy within 10 years in recognition of the fact that in a free democratic country, the way to progress and social well-being must rest on a foundation of education for all of which literacy is but the beginning.

Apart from the importance of education as an end in itself, the First Five Year Plan stated, "The success of planning in a democracy depends on the growth of cooperation and disciplined citizenship and the degree to which it is possible to evoke public enthusiasm and build up local leadership". Education was recognised as an input fundamental to the success of economic development.

By any standard, expansion in the field of education at all stages—primary education, engineering, medical, professional and other technical education, has been phenomenal.

In the last 30 years primary education has increased three times, middle school education by four times, higher secondary five times and University level education over six times—the number of universities alone increasing from 19 in 1950 to 118 by 1981.

The inconsistencies brought about by rapid population growth may be judged by the fact that while the number of institutions and the enrolment of students has expanded beyond measure, the number of **illiterates has risen from 386 million in 1971 to 446 million in 1981.**

It is evident that education is vital for Human Resource Development. "Human resource development is the process of increasing the knowledge, the skills and the capacities of all the people in a society. In economic terms it could be described as the accumulation of human capital and its effective investment in the development of an economy. In political terms, human resource development prepares a people for adult participation in political processes, particularly as citizens in a democracy. From the social and cultural points of view the development of human resources helps people to lead fuller and richer lives less bound to superstition and unscientific beliefs. in short the process of human resource development unlocks the door to modernisation." (Prof. Kenneth Boulding).

Environment and Population

Very often a case is made out that in the developing countries the urgent problem is one of underdevelopment and poverty and not of environmental pollution. We seem to be splitting hairs for the sake of argument. For what is "immediate" and what is "long-term" in the life of a nation cannot be separated neatly into compartments. Just 25 years ago, big business and a host of learned economists in the USA strongly decried the warnings given by the early environmentalists (Rachel Carson and others) and claimed that under modern conditions there were no limits to growth. Today the most intensive and highly complex measures to reverse environmental pollution or to check it, are being undertaken in the same country, at tremendous cost.

If the western experience does not seem convincing since it arises out of affluence and over-consumption, we in India have just to look around us to see the kinds of environmental pollution that have already set in, ranging from the air, water and noise pollution of our "developed" cities such as Bombay and Calcutta, to the pristine valley of Kashmir, where entire hillsides have been denuded of tree cover within a single decade, owing to the relentless demands of a rapidly growing population.

Population means PEOPLE. People need food, clothing, homes, education, transport, health services, jobs. As long as the resources of a country can meet these essential needs of its people, there is no population problem. If however the population grows faster than the rate at which the basic needs of each individual in a country can be met, the build-up of such a situation could, by its very momentum, produce a crisis of gigantic dimensions.

To meet just basic requirements, India needs to provide annually an additional 12 million tons of foodgrains, 188 million metres of cloth, 2.5 million houses; plus schools, teachers and jobs over and above what is already available—which as everyone knows, is quite inadequate.

Innovative Programmes

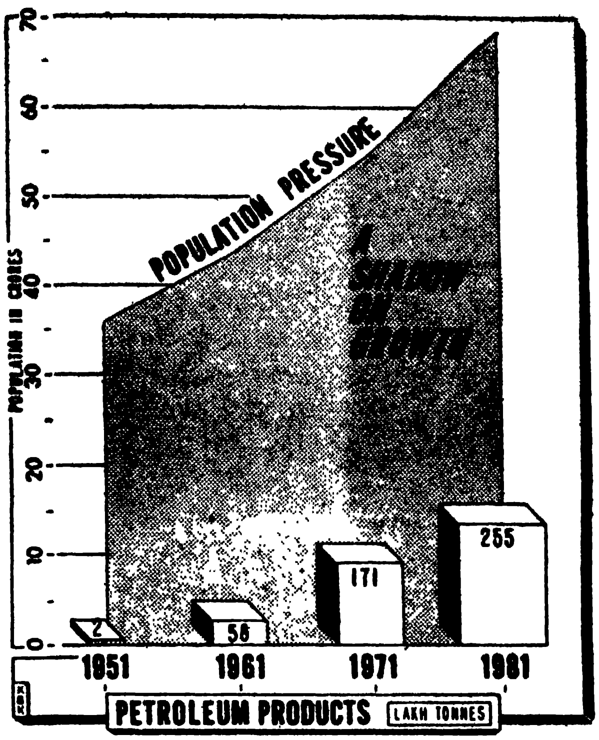
Take further the need for fresh air, pure water, space to live in! How is this need to be met ? The earth is a finite sphere. It has a limited land surface, its sources of pure water, its plant and mineral resources cannot be replenished as rapidly as the multiplication of human numbers. As forests are denuded to provide more land for cultivation and housing, erosion, floods and climatic changes occur, further endangering the future of human existence. Malnutrition stalks the land. It is already the lot of two-thirds of the world's present population.

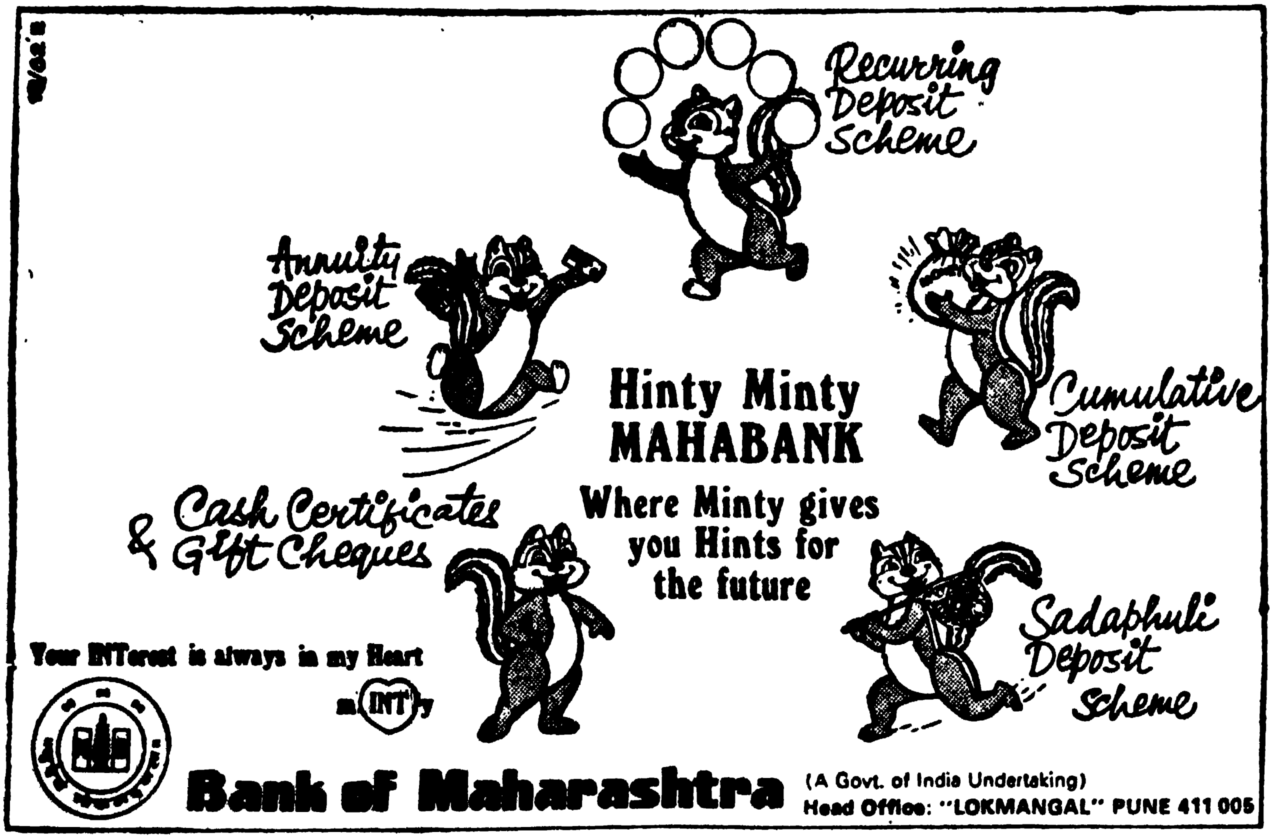
What will happen when the world's 3.5 million people double into a staggering seven billion by the end of the present century?

This is something we need to ponder over seriously. A problem of human beings—of flesh and blood—not just statistics extracted from census records.

It is because of this concern for family well-being and the betterment of our human resources, that the FPAI has since 1969 undertaken innovative pilot programmes in Population Education for the younger generation, for teachers, social workers and other concerned groups. Today the Government of India promotes population education for school and out-of-school youths through the five year National Population Education Project for schools and through the Adult Education Project for out-of-school youth.

To quote Mrs. Avabai B. Wadia, President of the FPAI and a pioneer in the field of Population Education, "the coming generation must be accorded the opportunity to acquire, in a timely and graded manner and in a stable educational atmosphere, a basic understanding of this modern phenomenon of burgeoning human population and the ways in which it interacts with the social, economic and political aspects of life, influencing thereby not only the physical standards but the very quality of human living". ☐





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Inter-state variations in population growth

The author stresses the need to take into consideration, while formulating the population policy the inter-state disparities in birth and death rates, and rural urban variations. The first step to reduce the rate of growth of population is to bring down the combined crude birth rate which now varies from 40.1 per thousand in UP to 25.6 in Kerala to the level of Kerala within the next 10 to 12 years. In the remaining years of the century, it should be brought down to the target of 17—18 per thousand. Similarly the difference between the rural and urban crude birth rates, which now ranges between 10.6 per 1000 in J & K to 1.2 in Kerala and average 6.6 at national level should be brought down to the Kerala level. Similarly the combined crude death rate per 1000 should be brought down to the Kerala Level of 7.1. What Kerala has done, the other States should also be able to do. We cannot solve our demographic problem at the national level unless we look in detail at the position in each individual state, analyse their demographic record in the light of the most progressive among them, and seek to apply the lessons learned from such an exercise. And this requires a thorough study of the demography of each individual state in respect of the role played by historical, economic, sociological, cultural, developmental and political factors, with a view to drawing lessons for remedial demographic policy.

V. K. R. V. RAO

I HAVE always held the view that we should look at our population problem not in macro or all-India terms alone, but pay special attention to the problem of the individual states and to inter-state variations, and formulate a population policy that will take into account these variations and make the all-India policy an integrated whole of appropriate policies for the constituent individual states. A perusal of the papers released so far relating to the 1981 census results have further strengthened my conviction about the need for studies of individual states and inter-state variations for the purpose of formulating a national policy for curbing the growth of India's population.

During the three decades of planned development, the net national product at constant prices has increased by 165 per cent, but the per capita share has increased only by 45 per cent; and it is the latter which is more relevant for economic well-being. The vast difference between the increase in national net product and in per capita national net product is the direct result of the increase in population by 323 millions or 89.4 per cent over 1951.

The increase that has taken place in our population has not been contributed to uniformly by the different states either in the total of the six decades from 1921 which have seen a significant rate of growth in each decade or in the rate of growth in each of these six decades. Table 1 gives the state rates of growth over the whole period as compared to the all-India figures and the number of decades in which the state rate has exceeded the corresponding decennial all-India rate.

State wide analysis

It will be seen that the states whose total growth over the period 1921-81 exceeded the corresponding all-India rate of 172 per cent was Assam (329), Gujarat (234), Rajasthan (231), Kerala (226), West Bengal (212), Maharashtra (204), Haryana (202), Andhra (196) and Karnataka (177), Madhya Pradesh had the same growth rate as all-India, namely 172. The remaining states had a growth rate less than the all-India rate of 172 per cent. namely Bihar (148), Jammu and Kashmir (147), Uttar Pradesh (138), Orissa (135), Punjab (133), Tamil Nadu (123) and Himachal Pradesh (120).

Of the 9 states whose growth over the total period of six decades exceeded the all-India rate 3 states exceeded the all-India decadal growth rate in every decade, including the latest one of 1971-82, namely, Assam, Gujarat and Rajasthan. Kerala which exceeded the all-India decadal growth rate in every decade from 1921 to 1971 showed a steep fall in the latest decade of 1971-82 to 19 per cent as against the all-India rate of 24.75 per cent. Madhya Pradesh which had the same total growth rate as all-India during 1921-81, showed a higher decadal growth rate during 1921-31, and 1951-71, and continued to have a higher decadal rate in 1971-81 as well, thus, showing a consistently higher than all-India decadal rate of growth for the last three decades. Maharashtra, which like Madhya Pradesh, showed a higher than all-India decadal rates for four decades differed from it in so far as it recorded a marginal decline in its decadal growth rate in 1971-81, after being consistently above the all-India decadal growth rate in the three decades of 1941-71. West Bengal, which had a higher than all-India decadal growth rate in 1931-41 and in 1951-71, recorded a perceptible decline in the latest decade with 22.96 per cent against the all-India figure of 24.75 per cent. Haryana, which had a higher decadal growth rate in 1931-41 and in 1951-71, continued like Madhya Pradesh, to have a higher decadal growth rate in 1971-81 as well. Andhra Pradesh too had a higher decadal growth rate in 1921-31, and 1941-51, has shown a consistent and significant decline from the all-India decadal growth rate during 1951-81. which includes the latest decade. Karnataka, which had a higher decadal growth rate in 1941-61, and fell below the all-India rate in 1961-71, has now again gone above the all-India rate during the latest decade of 1971-81.

Of the 7 states whose growth rate during the total period of 1921-81 fell below the corresponding all-India rate, Bihar, except marginally for 1921-31, is below the all-India decadal growth rate in every decade including the latest decade, Jammu and Kashmir, which had a lower decadal growth rate during the four decades of 1921-1961 went above the all-India decadal rate in 1961-71 and continued to do so during the latest decade. Uttar Pradesh, whose decadal growth rate was continuously below the corresponding all-India rates during the five decades of 1921-71, has suddenly reversed its trend and recorded a higher growth rate during the latest decade of 1971-81. Orissa, which had a higher decadal growth rate in 1921-31 and a marginally higher growth rate in 1961-71, resumed its previous trend and had a lower rate of decadal growth during 1971-81, Punjab, which had a higher decadal growth rate than all-India during 1921-41 and again in 1951-61, has been below the all-India rate during the two decades of 1961-81, including the latest decade. Tamil Nadu had only one decade of a higher than all-India growth rate during 1941-51 and has otherwise been consistently below the all-India decadal growth rates, including the latest decade. Himachal Pradesh has been continually below the all-India decadal growth during all the six decades of 1921-81.

It will be seen from this review that the states which need special attention from the point of view of population control policy are Assam, Gujarat and Rajasthan which have been consistently above the all-India decadal growth rate during all the six decades of 1921-81, Madhya Pradesh and Haryana which have been consistently above the all-India rate during the last three decades of 1951-81, Jammu and Kashmir which has been similarly above the all-India rate but only during the last two decades of 1961-81, and Uttar Pradesh, our largest state, which has suddenly reversed its continuous record of five decades of being below the all-India growth rate, and now shows a higher growth rate during 1971-81, though only marginally, of 25.49 per cent as against the all-India rate of 24.75 per cent. Karnataka also claims attention for having reversed its 1961-71 performance and gone above the all-India rate in 1971-81 by 10.68 per cent points. The outstanding satisfactory feature is the performance of the Kerala, which has reversed its trend of 5 decades of being above the all-India growth rate and made a sharp decline below it during 1971-81.

Birth and death rates

We may now consider the population growth rate during the latest Census decade of 1971-81 from the point of view of the contribution made by the combined crude birth rates and death rates and by the rural and urban crude birth rates and death rates separately. According to the latest sample registration bulletin of December 1980, issued by the Registrar General, the combined crude birth rate for all-India fell from 36.8 per thousand in 1970 to 33.0 in 1979 or by 3.8 per cent points. (I am aware that the sample registration data of birth rates and death rates are not satisfactory and are undoubtedly under estimates, judging from the actual growth in the population during 1971-81 ; but they constitute the best available data on the subject. I may add that the extent of underestimation is generally considered to be higher in the case of the rural figures as compared to the urban figures but it is not possible to verify this view in the absence of a break-up in the urban data by natural growth and by migration). As against this, the fall in the case of individual states from a three-year moving average of 1970-72 to that of 1977-79 varied from a high of 6.9 percentage points in the case of Assam to a low of 1.0 in Jammu and Kashmir (figures are not available for West Bengal) ; but this does not reflect the reality of the comparative of the crude birth rates for 1977-79 for the states varied from a high of 40.1 for Uttar Pradesh to a low of 25.6 for Kerala. Table-2 gives the inter-state rate of the combined crude birth rate (moving average) for 1977-79 and the fall in percentage points from those for 1970-72.

Though the fall in percentage points was as high as 6.9 and 6.4 in the case of Assam and Rajasthan, their crude birth rates averaged to as much as 31.0 and 34.7 per 1,000 respectively. In the case of Kerala and Maharashtra, however, where also the fall in percentage points was quite high, namely, 5.7 and 5.3, their crude birth rates per 1,000 was much lower in 1977-79 being 25.6 and 26.7 respectively.

TABLE 1

State rates of growth of population 1921-81

States	Population (in 100s)		Percentage increase in 1981 over'21	No. of Decades in which the State Rate has exceeded the all-India rate		
	1921	1981		1921-81	1971-81	1921-71
Andhra	21420	62404	196.0	2	—	2
Assam	4637	19903	329.2	6	1	5
Bihar	28127	69823	148.2	1	—	1
Gujarat	10176	33961	233.7	6	1	5
Haryana	4256	12581	202.0	4	1	3
Himachal Pradesh	1928	4238	119.8	Nil	—	Nil
J & K	2424	5982	146.8	2	1	1
Karnataka	13378	37043	176.9	3	1	2
Kerala	7802	25403	225.6	5	—	5
Madhya Pradesh	19172	52132	171.9	4	1	3
Maharashtra	20850	62694	203.6	4	—	4
Orissa	11169	26272	135.2	2	—	2
Punjab	7153	16670	133.0	3	—	3
Rajasthan	10293	34103	231.3	6	1	5
Tamil Nadu	21629	48297	123.3	1	—	1
U.P.	46672	110858	137.5	1	1	1
West Bengal	17474	54485	211.8	3	—	3
All India	251321	683810	172.1			

TABLE 2

Combined Crude Birth Rates

State	Combined crude BR 1977-79	Fall in Percentage point of combined crude BR of 1970-72
Andhra Pradesh	32.5	1.9
Assam	31.0	6.9
Bihar	30.8	1.5
Gujarat	35.9	4.5
Haryana	34.8	4.8
Himachal Pradesh	30.5	3.8
Jammu & Kashmir	31.5	1.0
Karnataka	28.1	3.9
Kerala	25.6	5.7
Madhya Pradesh	37.7	1.5
Maharashtra	26.7	5.3
Orissa	31.7	4.1
Punjab	29.9	4.3
Rajasthan	34.7	6.4
Tamil Nadu	28.9	2.4
Uttar Pradesh	40.1	4.4
West Bengal	NA	NA

It appears from Table 2 that in the Indian context the states could be classified under fertility groups of low, medium, high and very high. The low fertility group (from BR 25 to 29) would consist of Kerala 25.6), Maharashtra (26.7), Karnataka (28.1) and Tamil Nadu (28.9), Himachal Pradesh (39.5), Bihar (30.8), Assam (31.0) Jammu and Kashmir (31.5), Orissa (31.7) and Andhra Pradesh (32.5), the high group (from BR 34 to 36) of Rajasthan (34.7), Haryana (34.8), and Gujarat (35.9) while the very high fertility group (from BR 37 to 40) would consist of Madhya Pradesh (37.7) and Uttar Pradesh (40.1). Though even the lowest crude BR of 25.6 per 1,000 of Kerala cannot be considered satisfactory by either desirable or even comparative demographic standards, obviously the higher priority attention for planned reduction in fertility should be given to the highest group of Uttar Pradesh and Madhya Pradesh, which also accounts for 23.4 per cent or nearly Rs. 4 of India's current population, and to the next highest group of Rajasthan, Haryana and Gujarat, which account for 11.8 per cent of the population.

We may now turn to the combined crude death rate, which constitutes the other determinent of population growth. While in the case of the birth rate, a reduction is desired for decreasing the rate of population growth, no one can suggest that the death should be deliberately raised, the only point to note in respect of demographic policy is the need for paying still more attention to a planned reduction in fertility when undertaking health, medical and other allied measures for reducing the death rate.

The all-India crude death rate, according to the Sample Registration Bulletin of December 1980, has fallen from 15.7 per thousand in 1970 to 12.8 in 1979 or by 2.1 percentage points. As against this, the fall in the case of individual states from a three-year moving average of 1970-72 to that of 1977-79 varied from a high of 4.8 percentage points in the case of Assam to a low of 0.2 in the case of Jammu and Kashmir. But this does not reflect the reality of the comparative inter-state position in respect of death rate, which varied from a high of 18.5 per thousand in the case of Uttar Pradesh to a low of 7.1 in Kerala. Table-3 gives the inter-state picture of the combined crude death rate (moving average for 1977-79) and the fall in percentage points from those in 1970-72.

Though the fall in percentage points was as high as 4.0 in the case of Uttar Pradesh, the crude death rate was as much as 18.5 per 1,000, while in the case of Jammu and Kashmir and Punjab, the death rate per 1,000 was only 10.8 though the fall in percentage points was as low as 0.2 and 0.6 respectively. In the case of Kerala, the crude death rate per 1,000 was as low as 7.1 though the fall in percentage points was higher than in the case of Jammu and Kashmir and Punjab, being 2.0.

TABLE 3

Combined crude death rates

State	Combined crude DR 1977-79	Fall in percentage points of combined crude DR of 1970-72
Andhra Pradesh	13.4	2.1
Assam	12.5	4.8
Bihar	12.5	3.0
Gujarat	13.5	2.7
Haryana	12.6	-2.3*
Himachal Pradesh	11.2	4.5
Jammu and Kashmir	10.8	0.2
Karnataka	11.2	1.5
Kerala	7.1	2.0
Madhya Pradesh	16.0	0.9
Maharashtra	11.3	1.0
Orissa	15.3	2.0
Punjab	10.8	0.6
Rajasthan	14.4	2.2
Tamil Nadu	12.9	2.1
Uttar Pradesh	18.5	4.0
West Bengal	NA	NA

*The Death Rate rose by 2.3 percentage points in Haryana.

TABLE 4

Crude Birth rate, rural and urban

State	Rural	Urban	Difference
Andhra Pradesh	33.4	28.4	5.0
Assam	31.7	23.7	8.0
Bihar	31.1	27.1	4.0
Gujarat	37.4	31.3	6.1
Haryana	36.1	28.5	7.6
Himachal Pradesh	31.2	21.2	10.0
Jammu and Kashmir	33.5	22.9	10.0
Karnataka	29.1	25.4	3.7
Kerala	25.8	24.6	1.2
Madhya Pradesh	38.9	31.1	7.8
Maharashtra	27.5	24.8	2.7
Orissa	32.0	28.5	3.5
Punjab	30.5	27.6	2.9
Rajasthan	35.8	29.8	6.0
Tamil Nadu	29.8	26.7	3.1
Uttar Pradesh	41.2	32.2	10.0
West Bengal	NA	NA	NA

It appears from the table that the states could be grouped under mortality categories of very high, high medium, low and very low. The very high mortality group would consist of Rajasthan (14.4), Orissa (15.8), Madhya Pradesh (18.5), the high group of Gujarat (13.5) and Andhra (13.4), the medium group of Bihar (12.5), Assam (12.5), Haryana (12.6) and Tamil Nadu (12.9) and the low group of Jammu and Kashmir (10.8), Punjab (10.6) Karnataka (11.2), Himachal Pradesh (11.2) and Maharashtra (11.3). The very low group includes only the State of Kerala with a crude death rate of 7.1 per 1,000.

It will be seen that the states of Uttar Pradesh and Madhya Pradesh in the very high mortality group are also the States which fall in the very high fertility group. In view of the likelihood of a more rapid fall in the death rate in these states with the expected improvement in income and health conditions, the imperative need for planning their fertility reduction becomes even more emphasised. A similar consideration applies to the high mortality state of Rajasthan, and Gujarat which fall in the high fertility group. Haryana, though in the medium mortality group, is in the high fertility group and needs priority attention for fertility reduction. Orissa and Andhra Pradesh, which are in the medium fertility group, are likely to loose their advantage in terms of the population growth rate because they are now in the very high and high mortality groups, and there is bound to be a fall in the mortality rate; hence priority attention should be given to them also in the national programme of fertility reduction. Jammu and Kashmir, Punjab and Himachal Pradesh are in the low mortality group, while Karnataka, and Maharashtra are both in the low mortality and fertility groups and Kerala is in the very low mortality and fertility groups. Tamil Nadu, though in the low fertility group, is in the medium mortality group and will have to seek a further reduction in its fertility. Kerala and Maharashtra are thus in the best position regarding both fertility and mortality, while Karnataka's position has been threatened by its recent decadal rise in population growth rate, and Tamil Nadu's position is not strong in spite of its low fertility because of its medium mortality.

The raise in the mortality rate in Haryana during the seventies and the negligible fall in that of Madhya Pradesh with its high mortality rate is a matter of concern. So is the mortality position in Uttar Pradesh, Orissa, and Rajasthan in spite of a fall of 2 to 4 percentage points during the seventies, because of the high mortality rate they still find themselves with towards the end of the decade; and similar is the position with Gujarat and Andhra Pradesh. Kerala's record in mortality reduction is outstanding during the seventies, having brought it down by 2 percentage points from the already low rate of 9.1 per thousand with which it started the decade; and it is undoubtedly a tribute to its health service system as well as the sharp reduction it has effected in fertility during this decade.

I now turn to the rural-urban difference in the crude birth rate. At the all-India, the' rural birth rate has fallen by 4.6 percentage points from 38.9 per thousand in 1970 to 84.3 in 1979, whereas the decline in the urban birth rate during the same period has been by only 1.9 percentage points from 29.7 per thousand in 1970 to 27.8 in 1979. The urban birth rate, however, is lower than the rural birth rate by 6.5 percentage points in 1979. But the difference between the rural and urban birth rates has been reduced by 2.7 percentage from that in 1970.

When we look at the inter-state position, however, we find that the rural crude birth rate varies from a high of 41.2 per thousand to a low of 25.8 in Kerala, while the variation in the urban birth rate is from a high of 32.2 in Uttar Pradesh to a low of 21.2 in Himachal Pradesh during 1977-79 (moving average). The difference between the rural and urban birth rate also varies widely, from 10.6 and 10.0 per thousand in the case of Jammu and Kashmir, Himachal Pradesh and Uttar Pradesh to a startling low of 1.2 in the case of Kerala. Table-4 gives the relevant data.

The highest rural birth rates (from 35.8 to 41.2 per thousand) are in the states of Uttar Pradesh (41.2), Madhya Pradesh (38.9), Gujarat (37.4), Haryana (36.1) and Rajasthan (35.8). The same states are also in the highest urban birth rate group (from 28.4 to 32.2 per thousand) with Uttar Pradesh (32.2), Gujarat (31.3), Madhya Pradesh (31.1), Rajasthan (29.8) and Haryana (28.5). These are also the states with a decadal growth rate higher than all-India during the last six decades in the case of Gujarat and Rajasthan and the last three decades in the case of Haryana and Madhya Pradesh while Uttar Pradesh has had a higher decadal growth rates only in the recent decade of 1971-81. Obviously, those states should rank highest for priority attention in any national programme of fertility reduction.

The next group of high rural birth rate (between 33 and 34 per thousand) and Jammu and Kashmir (33.5) and Andhra (33.4). Of the two, Andhdra falls in the highest urban birth rate group with 28.4 per thousand, while Jammu and Kashmir falls in the lowest urban birth rate group with 22.9 per thousand. The next group, which may be termed the medium, of rural birth (from 29 to 32 per thousand) includes Karnataka (29.1), Tamil Nadu (29.8), Punjab (30.5), Bihar (31.1), Himachal Pradesh (31.2), Assam (31.7) and Orissa (32.0). Of these, Orissa, falls in the highest urban birth rate group with 28.5 per thousand, while in the second highest urban birth rate group (round about 27 per thousand) we find Tamil Nadu (26.7), Bihar (27.1) and Punjab (27.6), while Karnataka and Assam fall in the next urban birth rate group (between 23 and 26 per thousand), and Assam (23.7). Himachal Pradesh falls in the lowest urban birth rate group with 21.2 per thousand. The lowest rural birth rate group (from 25 to 28 per thousand) consists of Maharashtra (27.5) and Kerala (24.6), these are also the two states with the least difference between the rural and urban birth rates (of less than 3 percentage points).

We may now sum up some of the policy implications of this analysis. There can be no doubt that the rate of population growth reached in 1971-81 needs to be drastically brought down in the next two decades if India is not to face an intolerable population situation by the beginning of the next century. If China, which had started from a demographic situation more or less similar to ours, could practically halve the growth rate of her population within two decades. I don't see why India should not be able to do the same. This means, that by the end of the century, the combined crude birth rate should be brought down to 17.18 per thousand at the national level from its current level of 33, while allowance should be made for a decline in the combined crude death rate of 7.8 per thousand as compared to the current level of 12.8. It may be pointed out in this connection that the lowest combined crude birth rate already reached in India is 25.6 per thousand in Kerala, while the same state has also recorded a combined crude rate of 7.1 per thousand.

For effecting this proposed reduction in the combined crude birth rates and death rates at the national level, the analysis of inter-state variations and rural-urban variations given earlier should serve as pointers to the demographic policy to be followed at the state levels. Thus, as a first step, the combined crude birth rate which now varies from 40.1 per thousand in Uttar Pradesh to 25.6 in Kerala should be brought down to the Kerala level within the next 10 or 12 years. In the remaining years before the end of the century, it should be brought down to the target suggested earlier of 17.18 per thousand. At the same time and as a part of the same process, the difference between the rural and urban crude birth rates, which now ranges between 10.6 per 1,000 in Jammu and Kashmir to 1.2 in Kerala and averages 6.6 at the national level should be brought down to the Kerala level. Similarly, the combined crude death rate per 1,000 which now ranges between 18.5 in Uttar Pradesh and 7.1 in Kerala should be brought down to the Kerala level before the end of the century. What Kerala has done, the other states should also be able to do. There is no need to go to China for imbibing the needed wisdom nor to foreign experts for advice. Within the set-up of a democratic system and as a result of a combination of developmental and demographic measures, Kerala has succeeded in bringing about an appreciable reduction in its combined crude birth rates and death rates per 1,000 as compared to the corresponding figures at the national level. The national level is so much higher than the Kerala level because of the significant differences of the demographic record of other states as compared to Kerala. We cannot solve our demographic problem at the national level unless we look in

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Qualitative dimension of the population problem

With the multiplying number, the population explosion has also the qualitative dimension in the sense that the physical and mental calibre of our human resources has been deteriorating. Persistent ill health and undernutrition afflict large proportions of successive generation of our children during the crucial years of their growth and development. As a remedy, the author suggests the institution of an imaginative special programme in rural areas to train young unmarried girls of 10 years or more of age in infant feeding and child rearing, nutrition, family planning, personal and environmental hygiene, plus, most importantly vocational training designed to impart special skills for self-employment in selected fields appropriate to the particular areas.

DR. C. GOPALAN

IN most discussions of the 'population problem', major concern and attention have been directed to the quantitative dimension—the alarming growth in numbers outstripping available or anticipated resources essential for sustaining such growth. There is, however, another dimension of the 'population problem' in our country, the qualitative dimension which should cause even greater concern and alarm ; this is the steady deterioration of the physical and mental calibre of our Human Resources—the most precious of all national resources—through persistent ill-health and undernutrition afflicting large proportions of successive generations of our children, during the crucial years of their growth and development. Thus, of the nearly 23 million children who will be born in our country in 1983, nearly 3 million may be expected to die before they reach the first year ; another one million more will drop by the way-side before they complete their childhood. Of the remaining 19 million, nearly 9 million will emerge into adulthood with impaired physical stamina, low productivity and poor mental abilities because of serious undernutrition and ill-health during their childhood ; yet another 7 million who will suffer milder forms of malnutrition may reach adulthood with less striking physical and mental impairment. Only less than 3 million of the 23 million to be born in 1983 will become truly healthy, physically fit, productive and intellectually capable citizens of this country. Thus the full genetic potential for growth, physical and mental development would have been achieved by less than 15 per cent of the children born ; and even this may perhaps be an over-estimate. In absolute terms, the annual numbers of citizens of sub-standard quality that vill be added to our population will steadily rise in the years ahead if present trends persist. This steady and relentless undermining of the most valuable of all our resources, poses a far greater threat to our nation than any threat of armed aggression from external agencies. It must however be pointed out that this frightening scenario, is base on currently prevailing trends in our national health and nutrition scene, and only seeks to indicate what would happen if these trends continue.

The qualitative dimension of the population problem as stated above, is of course, interrelated to the quantitative dimension in a mutually synergistic fashion. Thus, while the relentless increase in numbers aggravates the qualitative deterioration, the latter serves to facilitate such increase.

It must however be emphasised that population growth, accounts only partly for the progressive erosion of the quality of our human resources, and the current picture of ill-health and malnutrition in the country. Even with our present population and food resources, if all the food available in the country can be distributed in accordance with physiological needs, there will be very little malnutrition in the country. This will of course imply the raising of the income levels of the vast majority of the rural poor. The total amount of food needed to bridge the calorie-gap in the diets of our poor children in the entire country represents only a small fraction of our buffer stocks. Again, it is not population growth that is preventing doctors, nurses and health personnel from going to rural areas, or our policy makers from providing basic minimal health-care to our rural masses. Population growth provides a convenient alibi for those who are either unwilling or unable to take and implement those hard decisions necessary to remove the glaring socio-economic, and rural-urban, disparities which disfigure

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Inaugural Address at the Indian Association for the Study of Population, New Delhi 27 December, 1982 our national scene today, and which are largely responsible for the present state of ill-health and undernutrition in the country. Family-planning programmes do not call for sacrifices from the rich, nor do they threaten entrenched vested interests. It is tempting, therefore, to lay the blame for all the ills of the poor on their own improvidence and offer them family-planning programmes as a panacea. This is indeed what the developed countries are doing with respect to poor developing countries, and in turn what the urban rich within the country are doing with respect to their own rural poor.

Let me add at once that I do not underrate the great importance and the imperative need for family-planning programmes and population control measures. It is in national interests that these programmes continue to receive highest priority and indeed that they are further intensified. But the problems of ill-health and undernutrition among the poor will not be solved by these measures along within the next three decades.

The national nutrition scene

Lest it should be said that the picture of undernutrition as presented above is exaggerated, let us take a closer look. For some years now, Sukhatme, has argued that the magnitude of undernutrition in the country is not as high as 40 per cent, but only around half this figure. Even if for argument's sake, we accept the lower figure, the number of undernourished people in the country will be around 140 million ; certainly not a situation to feel complacent about ! Sukhatme's thesis is that in judging the adequacy of diets, the yard-stick should not be the recommended mean intake (a yard-stick that is now widely used by national and international bodies) but recommended mean intake minus 2 standard deviations (m-2SD) ; using the yard-stick he recommends, half the problem of undernutrition in the country can be 'wiped out'—at least on paper if not in reality. Sukhatme has tried to support his thesis through some physiological (not statistical) postulates which have no factual foundation of proven validity. Sukhatme's views have been forcefully challenged and rebutted on the basis of his own data, by several eminent members of his own statistical fraternity, let alone physiologists and nutrition scientists. But, what is important for our purpose here is the fact that successive reports of the National Nutrition Monitoring Bureau in Hyderabad show that even with using Sukhatme's questionable yard-stick of m-2SD of recommended intake (a yard-stick which serves to underestimate undernutrition) more than 50 per cent of children under five suffer from undernutrition and that in some parts of the country, the figure is as high as 80 per cent. Thus, it would appear that Sukhatme's new yard-stick does not help to wipe out malnutrition even on paper !

Latest reports of the National Nutrition Monitoring Bureau also show that in nearly 85 per cent of children under 5 years of age, weightage is less than 80 per cent of the normal values observed in well-nourished Indian children not subject to socio-economic constraints. Here it is argued by some that we may ignore weight deficits upto 60 per cents of normal values and consider only those children with higher weight deficits—i.e. those with wt/age less than 60 per cent of normal values, as undernourished. This will again "help" to reduce the magnitude of the malnutrition problem on paper ! The justification profferred for this approach is that it is only children with weights less than 60 per cent of normal that are malnourished severely enough to be on the verge of death. The others may somehow "muddle through" and manage to survive, and so could be described as "adopted"—meaning that they have come to terms with, and have learnt to reconcile themselves to their bad lot. In the first place, the 60 per cent cut-off point is wholly arbitrary and is not based on any physiological criteria. In the second place the entire reasoning is based on lack of appreciation of the true implications of the word 'adaptation'. Adaptation has been apparently considered as equivalent to or synonymous with normalcy. A person with high blood-pressure can 'adapt' himself to his condition through hypertrophy of his heart; but no cardiologist will pronounce him as normal. The fact that between death and normalcy, there exists a broad twilight zone of morbidity, functional impairment of various kinds, apathy, lack of sense of well-being, poor physical stamina, low productivity, etc., has been largely lost sight of. Malnourished children who may escape death eventually grow into stunted adults of low bodysize and productivity; and low body-sized women with relatively small bicrestal diameters beget babies of low body weight which in turn develop along a low growth trajectory (unless taken in hand for special nutrition care in infancy). In a recent in-depth longitudinal study of rural communities in Mexico, Chavez and his colleagues have clearly portrayed the long-term effects on physical development, productivity, mental functioning and behavioural attitudes of survivors of childhood malnutrition who had reached adulthood. They also refer to the "limited intra-uterine foetal development" in small-sized undernourished women, which in turn affects the weight of the child at birth and limits his development resulting in his ending up as a small adult. But then, we are told that—"low body size is welcome ("small is beautiful") because the energy requirements of such subjects will be low; that the resultant low productivity and low earning capacity should not matter because in any case we are a labour-intensive, cheap-labour economy. Our labourers have the body size suited to our poor economy." It should be obvious that this is precisely the approach that will serve to perpetuate undernutrition in the country and aggravate the progressive qualitative deterioration of human resources. Such survivors are themselves at risk of being the victims of their poor socio-economic environment, being less effective than otherwise would be the case in their social adaptations. In turn they will choose mates of similar characteristics and may rear children under conditions and in a fashion fatally programmed to produce a new generation of malnourished individuals. It is a tragedy that childhood undernutrition contributes heavily to high child mortality; but an even greater tragedy, from the national point of view, is that it generates a pool of sub-standard survivors who serve to perpetuate the undernutrition scenario over successive generations.

It has been estimated that today about 40 million people are suffering from goitre. This is not just a cosmetic problem but a disease which impairs health and productivity. Recent studies, one carried out by a team for the All-India Institute of Medical Sciences, and another by a team headed by Prof. K. N. Agarwal on behalf of the Nutrition Foundation of India, have provided now indications of the impact of goitre on child development. Earlier we had imagined that the damage inflicted by goitre on child development was restricted to clinically detectable cases of cretinism which are relatively small. But Prof. Agarwal's studies suggest that developmental quotients of children of goitrous mothers are significantly lower though they do not actually exhibit clinical signs of frank cretinism. Considering that the endemic goitre belt in our country stretches across the entire sub-Himalayan region, and endemic goitre zones have also been detected in Maharashtra and Madhya Pradesh, we have in the goitre problem another major factor contributing to the qualitative erosion of our population.

Iron-deficiency anemia is a relatively ancient disease, but some recent observations indicate some important new dimensions. Studies carried out in the National Institute of Nutrition, Hyderabad, have however shown that in a fairly large sample, nearly 63 per cent of children below 3 years of age and about 45 per cent of children between 3 and 5 years were found to suffer from anaemia; the anaemia being moderate or severe in 10 per cent to 15 per cent. The disease is not dramatic in its effects and therefore goes largely undetected and untreated in poor communities. One of the most exciting discoveries in the field of Nutrition in recent times, is that iron deficiency can deleteriously alter brain biochemistry and function; and thereby influence human behaviour itself. These observations indicate that iron-deficiency anaemia which is so widespread in our population could bring about functional changes that could alter the entire behavioural pattern of the subjects concerned—that is, of whole segments of our population. The enormous significance of this finding from the point of view of social development of poor communities has yet to be fully elucidated and comprehended. It is however clear that iron deficiency, which we had taken for granted, can in fact be an important factor in bringing about a qualitative change in the behaviours and attitudes of our poor populations.

It must be clear that the Nutrition Factor must be accorded the most earnest consideration in a population policy designed to promote National Development.

The health scene

Infant Mortality Rate in our rural population has remained stationary in the past decade (136 in 1970 and 136 in 1978). There has been some decline in urban mortality rate—from 90 in 1970 to 70 in 1978, and thus the rural-urban disparity today is even greater than a decade ago. Age specific death rates in the 0—4 year age group have shown only a slight decline (55.3 in 1970 to 50.4 in 1978. These figures would suggest that there has been no significant improvement in the health conditions of our population as a whole, during the last decade.

Our experience in the last few years also indicates that "rural development" programmes need not necessarily be automatically reflected in better health|nutritional status, especially of women and children. This has been strikinly illustrated by the Punjab experience. Cowan draws pointed attention to the curious paradox that while the villages around Ludhiana in Punjab are booming with prosperity and only 11 per cent of the rural families of the state live below the poverty line, Infant Mortality Rate has shown no decline, and the number of premature low birth-weight babies has increased. Cowan attributes this to the following factors. "The fruits of development were being enjoyed by the privileged approximately two-thirds of each village who do not belong to the scheduled castes, the landowners. As for the poor, development had certainly increased their work opportunities, their incomes and the total amount of food consumed by the family and the state of nutrition of the male wage earners and older children was satisfactory. As for the mothers of the poor community however, 'prosperity' had resulted in more work, more food to be cooked, fewer opportunities to rest even during the latter months of pregnancy, little time to expend on infant feeding." It is the children of these poor mothers—especially the female children—that accounted for the high mortality and high prevalence of malnutrition—50 per cent of the girls and 20 per cent of the boys below 5 years suffering severe malnutrition in prosperous rural Punjab. On the basis of these observations Cowan goes on to support and endorse my earlier suggestion for including a specific health/nutrition component as an integral part of all Rural Development|Employment Programmes. She concludes that because of the "additional burdens imposed on the mother by 'prosperity', infant mortality rate and malnutrition will not decrease without an inbuilt health and nutrition component specially designed to meet the special needs of the under-privileged mother, and help her to find a solution which will not deprive her of income generating opportunities while not jeopardising her health." It is to be hoped that the lessons of the Punjab experience will benefit future Rural Employment Programmes in the country.

There is now increasing concern in the country over the possible erosion of the breast-feeding practice as a result of unethical and aggressive sales promotion campaigns of baby food manufacturers. We must also give careful considerations to the possible effects of increasing employment opportunities to poor women in rural areas on the breast-feeding practice. We must institute and devise arrangements to ensure that without denying income-generating opportunities to women, the practice of breast-feeding is not undermined and jeopardised. If we do not do so, we are sure to find infant malnutrition increasing substantially inspite of increasing employment and increasing income to mothers. These will certainly be major areas of concern to social, health, and development scientists in the next two decades.

Food Production

We have certainly done well with regard to our food-grain production during the last two decades. But there is absolutely no room for any complacency with regard to the coming two decades; indeed there is cause for anxiety. Thus we were able to increase the total area under food grain cultivation from 110.58 million hectares in 1955-56 to 128.18 million hectares in 1975-76. In 1980-81, the total area under food grain cultivation was 125.70 million hectares. Thus with regard to bringing in more area under cultivation, we have apparently already reached a plateau phase. The yield per hectare which was 605 kg|hectare in 1955-56 rose to 944 kg|hectare in 1975-76. In 1980-81 we registered a yield of 1032 kg|hectare. Apparently we have so far been able to maintain a sustained increase in yield, but it seems unlikely that we will be able to maintain a continuous increase of a progressively increasing order (which is what we will need to keep abreast of population growth) throughout the next two decades. Our per capita availability of food grains has not diminished so far in spite of the tremendous population growth. But are we going to be able to sustain this record over the next two decades, during which we will be entering perhaps the most crucial phase in the race between population growth and increase of food supply. I must confess to the uneasy feeling that the Green Revolution may be losing its momentum, and that we must invoke and press into service new strategies to maintain increasing food production. We may also have to devote greater attention to items other than food grains. I reckon the next two decades as the decades of real challenge to our agricultural scientists.

If we have to avoid violent social unrest in the next two decades, we must implement our Rural Development|Employment programmes in right earnest. These programmes must be designed to ensure productive and remunerative employment for the rural poor throughout the year and not just as sporadic famine-relief operations.

Minimum wages for agricultural labourers have to be fixed at least at Rs. 10 to Rs. 12 daily especially since these labourers have no wages at all for 3 to 4 months in the year. The ridiculously low wage of Rs. 5 daily suggested by the Wage Committee in Bombay, and even the Rs. 7.50 recently suggested at an All-India meet constitute frank exploitation and social injustice. It is not enough to prescribe a minimum wage; it must be implemented. Unless the income levels of agricultural labourers are substantially raised our health and family-planning, and universal primary education programmes in the countryside will not make headway.

The most crucial population segment from the point of view of family welfare, nutrition and health, is constituted by the young unmarried girls of age 10 and above in rural areas. Girls in rural areas are generally married off when they are barely twelve or thirteen years of age, and once they are so married they are 'lost'. By the time the girls reach their 25th year they have generally already had their five children and all family planning programmes addressed to rural women in their late twenties are largely futile. What is generally not appreciated is that the 'potential' fertility of undernourished women is actually very low in comparison to their well-nourished counterparts. Their reproductive span is low : they attain menarche later and menopause much earlier than well-nourished women. What is more, there is now evidence that for nearly ten years before they attain their menopause the undernourished women are actually infertile, the menstrual cycles being presumably anovulatory. I am therefore afraid that our family-planning programmes addressed to poor rural women in late twenties is akin to bolting the door after the horse has escaped. The most important single step that will reduce birth rates, is the raising of the age of girls at marriage. Girls are married off early because, unlike boys, they are now considered "economic liabilities" by their poor parents. The real key to the success of our family planning programme lies in our finding a way by which poor rural parents will find it rewarding not to marry off their daughters till they are at least 20 years of age.

I therefore suggest that an imaginative special programme be instituted in our rural areas addressed solely to young unmarried girls of 10 years or more. This programme could be spearheaded by women's organisations with technical help from Home Science Colleges and supported by the Khadi and Village Industries Organisation (or any other equivalent appropriate government or public sector agency) and should include a special two-year education programme on infant feeding and child rearing, nutrition, family-planning, personal and environmental hygiene, plus, most importantly, vocational training designed to impart special skills for self-employment in selected fields appropriate to the particular rural area. The candidates may include even school drop-outs. During this period the girls may receive a monthly stipend; after this training they should be helped over the next 2 years through bank loans and managerial and marketing services and technical help provided by government or public sector agencies, to set up in their own village the cottage industry for which they have been trained, either singly or in collective groups; the girls will be paid for the products they produce and in addition receive a salary. Girls who marry before completing 20 years of age will automatically drop out of the programme; those on the programme who marry after 20, may continue to receive these facilities, till such time as they have two children and no more.

Such a programme will have several obvious spin-offs and will help to transform the social scene in the countryside and enhance the status of women in their own homes and the society.

Despite numerous conferences and committees, effective extension of basic health care to our rural areas appears still a distant dream. If we do not achieve this ideal before 1990, then "Health For All by 2000 A.D." will have turned out to be no more than a hollow slogan. Among the many measures

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Interplay of population and development

A look at the population trend from 1901 *shows that except for a minor decrease in* 1911—21, *there has been a relentless increase in the population, the growth rate after* 1957 *has been high, and although the growth rate between the last two censuses has marginally declined, in absolute terms the population increased by* 135 *million in* 1971-81 *decade. The increase in one decade is nearly* 13 *million more than the total additional in the five decades from* 1901 *to* 1951. *The consequences are disheartening. Foodgrain production increased from* 50 *million tonnes in* 1950-51 *to over* 131 *million tonnes in* 1981-82. *But the per capita per day availability which was* 469 *grams in* 1961 *stood almost at the same level in* 1978, *after* 17 *years. Similarly availability of pulses, a rich source of protein for our poor people, has actually declined from* 69 *grams to* 45 *grams during the same period. Similar situation exists in other basic needs. This proves that the argument 'Development is the best contraception" is hollow. Development and population control measures are not exclusive to but supportive of each other. Socio-economic progress is known to contribute to adoption of the small family norm by couples and is also facilitated by reduction in population growth rates.*

J. L. SAAZ

IN the recent demographic history of India, 1981 has been a year of great divide. While in the first 20 years of this century (1901 to 1921) there has been an increase of 12.9 million in absolute terms, the increase in our numbers in the next 20 years (1921 to 1941) stood at 67.3 million. The increase in population registered between 1941 and 1961 was of the order of 120.4 million while the last two decades (between 1961 and 1981) witnessed an addition of as many as 244.6 million in our population. The following table 1 presents a comparative and progressive picture of our population growth in the current century :—

Table I

Population of India 1901-1981

Year	Population	Decadal Growth Rate		Per cent Progressive Growth Rate Over 1901
		Absolute	Percentage	
1901	238,396,327	—	-	—
1911	252,093,390	+13,697,063	+5.75	+5.75
1921	251,321,213	772,177	—0.31	+5.42
1931	278,977,238	+27,656,025	+11.00	+17.02
1941	318,660,580	+39,683,342	+14.22	+33.67
1951	361,088,090	+42,420,485	+13.31	+51.47
1961	439,234,771	+77,682,873	+21-51	+84.25
1971	548,159,652	+108,924,881	+24.80	+124.94
1981	583,810,051	+135,650,399	+24.75	+186.84

The most noteworthy features that emerge from this picture are (i) except for a minor decrease during the 1911—21 decade, there has been a relentless increase in population, (ii) the growth rate after 1951 has been particularly high, and (iii) although the growth rate between the last two censuses has marginally declined, in absolute terms, there has been an increase of 135 million in our population in the 1971—81 decade. This increase in *one* decade is nearly 13 million more than the addition to the total population in the five decades from 1901 to 1951.

Economy

Now let us have a look at the performance of Indian economy both before and after independence, and more specially during the era of planned development which started in 1951 with the first Five Year Plan. There are no two opinions about the fact of independent India inheriting a stagnant economy from a colonial rule. According to expert estimates of the national income of undivided India, the trend growth rate between 1900-01 and 1945-46 was 1.2 per cent for national income, about 0.3 per cent for agricultural production and 2.0 per cent for industrial production.

Table II

Growth Performance in the Plans

(Percentage)

Sl. No.	Items	First Plan 1951-52 to 55-56	Second Plan 1956-57 to 60-61	Third Plan 1961-62 to 65-66	Annual Plans 1966-67 to 68-69	Fourth Plan 1969-70 to 73-74	Fifth Plan* 1974-75 to 78-79	1950-51 to 1978-79
1	2	3	4	5	6	7	8	9
	Annual growth rates							
1.	National Income	3.6	4.0	2.2	4.0	3.3	5.4**	3.5
2.	Agricultural Production	4.1	4.0	(—) 1.4	6.2	2.9	4.2	2.7
3.	Industrial Production	7.3	6.6	9.0	2.0	4.7	5.9	6.1
4.	Per Capita Consumption	1.7	1.8	0.1	2.0	0.4	2.3	1.1
5.	Gross Fixed Investment	3.0	5.8	8.7	1.5	3.1	6.6	5.5

NOTE:—Col. 8 gives the trend rate calculated from a semilog regression. All other columns give compound growth rates between the base year before the Plan and the last year of the Plan.

*. For the time period originally envisaged for the Fifth Plan.

** This is the growth rate for the net national product (Natonal income).

As against this rather dismal picture, the underlying trend of growth rate between 1950-51 and 1978-79 has been 3.5 per cent for national income, 2.7 per cent for agricultural production, and 6.1 per cent for industrial production. In per capita terms, income has grown at a trend rate of 1.3 per cent, while after accounting for the rising share of investment in national income, has meant a modest 1.1 per cent per annum rise in per capita consumption. The Table II presents the growth performance of the economy in different plan periods :—

It will be observed from the above data that except for the Third Plan when, in the last year of the Plan, the economy was severely hit by an unprecedented drought, the rate of growth of national income has ranged between 3 and 5 per cent. This growth rate, though modest, is quite significant when viewed against the background of a crippled and stagnant economy of the pre-independence era which acted as a mill round our neck in the development process. The fact of India having overcome the handicap of stagnation and laid the groundwork of a self-sustained developmental process is in itself a very big achievement of post-independent era.

Having said that, it would be worthwhile to see how the high growth of population is eroding, if not wiping out, the achievements of our planned development. Let's take the foodgrains which is the first and foremost requirement of the teeming millions. From all accounts India has an impressive record of achievement in foodgrains production which has risen from 50 million tonnes in 1950-51 to over 131 million tonnes in 1981-82. But the pertinent question to ask is : has there been any significant increase in the per capita availability of foodgrains ?

The following Table III will help us find an answer :

Table III

Net Availability of Foodgrains

Year	Net quantity available Annual total* (Mn. tonnes)		Per capita per day (Grams)		
	Cereals	Pulses	Cereals	Pulses	Total
1961	64.6	11.1	400	69	469
1966	64.8	8.7	360	48	408
1974	88.1	8·8	412	41	453
1975	80.4	8.8	369	40	409
1976	90.7	11.4	407	51	458
1977	89.0	9.9	393	44	437
1978	98.5	10.3	428	45	473

*Total domestic production less quantity provided for seed requirements etc. plus imports, minus exports and adjustment for changes in Government stocks.

It is rather disconcerting to note that the per capita per day availability of foodgrains which was 469 grams in 1961 stood almost at the same level in 1978, even after 17 years. In the case of pulses which are an

(*Continued on page* 33)

important source of protein for the poor people, this availability had actually declined from 69 grams to 45 grams during the same period showing a significant reduction of nearly 34 per cent. This is just an elementary example of how unrestricted growth of population tends to neutralise the gains of development.

Though food may be the primary need of a human being yet we cannot ignore his other basic needs clothing, housing, education, health work, etc. During the 1971—81 decade India has added a net population of 135 million to its already burgeoning numbers. Explosive nature of this growth can be appreciated from the enormity of additional resources that are required to fulfil the minimum needs of a single year's increase in numbers. These are :

11,850,000 Quintals of foodgrains
180,000,000 Metres of cloth
2,391,000 Houses
1,21,000 Schools
3,55,000 School teachers
4,000,000 Jobs.

If we calculate the direct cost of maintaining the annual increase of 13.5 million population at an average income level of Rs. 1000 per year per person, it comes to Rs. 1,350 crores. And for the 135 millions which we have added in the last decade, this cost amounts to a staggering figure of Rs. 13,500 crores. At this juncture of our development when we are desperately engaged in raising the living standards of our people, nearly 50 per cent of whom are below the povertyline, the economy of the country simply cannot bear this additional burden.

Interaction between population and development

In recent years there has been a welcome recognition of the interaction between population and development at the conceptual as well as policy levels. Indian planners took due note of the implications of this interaction for the programmes for limiting the rate of population growth when they stated in the First Plan document : "The pressure of population growth must be regarded as a major desideratum. To some extent, improvement in living standards and more widespread education, especially among the women, will themselves tend to lower the rate. But positive measures are also necessary for inculcation of the need and techniques of family planning". However, swayed by the rhetoric of "Development is the best contraception", some people have swung to the other extreme to assert that there is no contraceptive solution to the population problem and that development will take care of the growing numbers. In the first place this fallacy should not have arisen, especially in the light of our experience of planned development which inspite of enormous investments and very considerable increase in production, has not effected the desired improvement in the standard of life of the majority of the people who stand at the bottom of the socio-economic ladder and whose needs should take the first priority in the development process. Actually, there is no room for any dichotomy on this account. Development and population control measures are not exclusive to but supportive of each other. Socio-economic progress is known to contribute to adoption of the 'small family norm' by couples and is also facilitated by reduction in population growth rates. If we are able to have strong in-built linkages between fertility control measures and economic development processes, the battle against growing numbers will be won sooner than expected. The Sixth Plan does provide such collaboration and interaction but it is a very complex and intricate process and our problem is how best to intermarry the two.

Admittedly, the interplay of population with economic growth is not uni-directional; a number of other factors such as the size of available resources and the level of technology attained also play an important role in determining whether a particular growth rate of a community is healthy or injurious to its economic well-being. Population is an asset only if it can be put to produdctive use; otherwise it becomes a liability. Our experience of last 30 years of planned development shows that the net growth of income has been just sufficient to offset the net growth of population. It is a case of running to stand still. Obviously, the gains of planned development would have been much better perceived if there could have been a bettercheck on population growth. Incidence of poverty in the country is high and the problems of unemployment has also been aggravated by the rapid expansion in population and labour force. We cannot avoid the inference that all our projections of reduction of poverty and unemployment will get upset if success is not achieved in containing the growth of population over a reasonable period of time supported by a much stepped-up development effort. ☐

Sugar : many new records set up

Sugar year 1981-82 which ended on September 30, 1982 has been a memorable year in many respects. It has been a year of record sugar production. Production this year was an all-time record i.e. 84.34 lakh tonnes compared to 51.42 lakh tonnes in 1980-81 and the earlier record production of 64.58 lakh tonnes in 1977-78.

Under the Sixth Plan, the target of sugar production to be achieved by the last year of the Plan i.e. 1984-85, is 76 lakh tonnes. Production this year has thus already exceeded the 1984-85 target by 8.34 lakh tonnes.

The total installed capacity of the sugar mills in the country at present is of the order of 64.80 lakh tonnes. The current year's production of 84.34 lakh tonnes is more than 130 per cent of the installed capacity, which is also a record.

Population explosion, social change

The loudest cry on population explosion comes from the rich industrialised countries of the West. These rich countries do not see that the solution to poverty and distribution around the world lies not merely in controlling population growth but also in reducing drastically the consumption standards of most people in the rich countries and of the affluent class amongst the poor countries. To the author, whether over-population is the cause of poverty or vice versa is an stam controversy. Both population explosion and poverty are symptoms of a deeper malady, which lies in the incapacity of our soci-economic system to put into service modern science and technology for an optimal utilisation of its planet's vast resources for economic development. For three reasons the population growth should slow down. Population in the less developed countries including India have a size sufficiently large enough to make them militarily and economically viable. They would not face any serious problems if their populations get stabilised at the present levels. The second reason is that there are several advantages in changing attitudes and behaviour patterns in respect of matters like age at marriage spacing of children etc. Thirdly, man has intervened on the side of mortality and he must therefore interven also on the side of fertility to maintain the equilibrium of population size.

VASANT P. PETHE

LET me begin with an anecdote. In an over-crowded slum in Bombay, explosive sounds of crackers were being heard, not knowing the reason, one neighbour asked another : "What is all this about ?" The other person explained : "This is population explosion !" One of the slum-dwellers was celebrating the birth of his 10th child !

Population explosion, population crisis, over-population are really loaded and therefore misleading terms. Is there population explosion in Less Developed Countries (LDCs) or in India, is not a proper question to ask. The proper question to ask is : why there is poverty in the developing countries of Asia, Africa and Latin America ? Usually, two answers are given to this question. Some thinkers known as the neo-Malthusians feel that over-population and large size of families lead to poverty. Critics of neo-Malthusianism like the socialists, Gandhians, etc. feel that it is really poverty which causes the phenomenon of over-population. To me, whether over-population is the cause of poverty or vice versa is a sham controversy. Both population explosion and poverty are symptoms of a deeper malady. The malady lies in the incapacity of our socio-economic system and the international economic order to put into service modern science and technology for an optimal utilization of this planet's vast resources for economic development. This, in turn, may be due to our deeper psychological, social, cultural and spiritual inadequacies and distortions, as pointed out by thinkers like Mahatma Gandhi, Vinoba Bhave, Schumacher, etc. Let us not go into these rather philosophical niceties.

Fortunately, whatever the differences concerning the diagnosis of the present predicament, almost all agree that population growth must slow down and that measures like family planning, increasing age at marriage, social reforms, etc. should be adopted to bring down this growth.

Standing room

There is no doubt that population growth cannot be allowed to go unabated for an indefinite time. For, simple arithmetical calculations would show that a certain continuous positive rate of population growth would sometime in the future leave standing room only for the human beings. However, it needs to be clearly understood that this is only an arithmetical truism. There is no reason for alarm on this count. History shows that human adjustments in social behaviour have always restored equilibria in every crisis in the progress of mankind. The neo-Melthusians, however, fail to see this point. Instead, they try to create a scare by making unrealistic projections. I do not wish to frighten my readers by saying that the population growth would one day sink this globe by the sheer weight of numbers.

The interesting point is that we do not need the incorrect and dangerous neo-Malthusian theory to plead for checking population growth. It is like employing a formidable fleet of tanks to meet a threat which in fact does not exist or which, if it exists, can be met by entirely humanitarian means. It seems to me that there are three simple reasons why population growth should slow down.

In the first place, populations in most countries in the LDCs including India have a size sufficiently large enough to make them militarily and economically viable. They are not likely to face any serious problems in economic and social management, if their populations get stabilized at the present levels.

Changing Attitudes

Secondly, there are several advantages in changing attitudes and behaviour patterns in respect of matters like age at marriage, family limitation, spacing of children, health, education, greater female participation in work, etc. These are desirable in their own right, besides their effect on reducing fertility and population growth. For example, such social changes are necessary for raising the status of women, increasing opportunities of education and employment for them, improving the health of children and in general the totality of family welfare at the individual household level.

The third and perhaps the most important reason is that man has intervened on the side of mortality; he must therefore perforce intervene also on the side of fertility to maintain the long-run equilibrium of population size. Control of famines, advancement of medical science and technology, invention of the antibiotics, improvement in preventive and social medicine, etc. have all brought down death rates around the world in a dramatic manner, irrespective of the levels of economic status and development of the nations.

Mortality and fertility

In the past, equilibrium between mortality and fertility was brought about, through the operation of natural factors. Now, with the reduction in mortility through human intervention, it has become obligatory for mankind to bring down fertility also through human intervention. What nature did in the past in terms of human suffering (like famine, disease) to maintain the balance of numbers, now with reduction in mortality, man must do through family welfare and social transformation (like increasing age at marriage, family planning, etc.) However, it is not adequately appreciated, especially by the Malthusians, that while success in respect of human intervention in the area of mortality was, by and large, independent of behavioural and social change, success in respect of human intervention in fertility is not possible without change in motivation of the people, which itself depends on appropriate social changes. In other words, human intervention in the area of fertility control is not as simple and quick as that in mortality control. Contrarily, it can be a very difficult, complex and time-consuming process. Hence, advocacy of compulsory measures as short-cuts in fertility control shows nothing but gross ignorance of the intricate psychological and social processes involved in fertility reduction.

Why is it that there is so much cry, out of all proportion, about the population explosion ? It is interesting to observe that this cry comes with the loudest voice from the high priests of population experts, from the rich industrialized countries of the West. These countries imagine a great threat to their affluence from the awakening Third World. They suffer from the fear that the rising numbers in the developing countries may tilt the balance of power against them and that they may not be able to continue enjoying the very high living standards which they are used to, for several decades in the past. These rich countries are not yet in a mood to see that the true solution to poverty and destitution around the world lies not merely in controlling population growth but also in reducing drastically the consumption standards of most people in the rich countries and of the affluent class amongst the poor countries.

Let me conclude with a forth right observation by our Prime Minister Indira Gandhi who said : "We cannot accept the habit of some people of affluent countries lecturing to us about our improvidence and describing the population growth of India and some other countries as the greatest threat to the future of the human race. For the world's future to be secure, the population growth of Asia, of Africa and of Latin America must slow down, but there must be an even more drastic slowing down of the consumption patterns of the affluent countries"

The solution to the population explosion lies, in addition to family planning, also in rapid economic development and appropriate social transformation. The sooner this transformation takes place, the nearer shall we be towards the solution of the twin problems of poverty and over-population. □

3500 villages adopted for intensive agricultural development

More than 3500 villages have so far been adopted for intensive implementation of programmes for improved agricultural productivity and the agriculture and forestry items of the New Twenty Point Programme.

This is as a result of efforts made by the Union Agriculture Ministry to involve different departments' officers of the Central and State Governments, public sector undertakings, universities and research institutions, fertilizer industry, voluntary organisations, etc., in the task of agricultural development.

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Karnataka : pioneer in Family planning

The administration of Mysore had realised a century ago the need for family planning. Dewan Rangacharlu, while addressing the first session of the Mysore State Representative Assembly at Mysore on October 7, 1881, expressed concern at the rapid population growth which hampered production, Shri Nyapathy Madhava Rao, as the Chief Secretary passed orders on June 11, 1930 for the establishment of birth control clinics. Consequently Mysore emerged as the first Government in the world to start a network of birth control clinics in the state. In spite of the social taboo, many married women visited the clinics at Bangalore and Mysore to seek advice from experts.

SETHU RAO. S.

THE princely State of Mysore which is part of Karnataka was often described 'a model state', "a pattern for the world" etc. Mahatma Gandhi considered it as Rama Rajya. Thanks to the farsightedness of benevolent rulers and its able administrators, Mysore State achieved many 'firsts' to its credit, like producing electricity by harnessing water, construction of world's largest transmission line over seventy years ago and the setting up of a legislative assembly.

It is interesting to note that the administration of Mysore had realised a century ago the need for checking population growth. Dewan Rangacharlu, the first Dewan of modern Mysore while addressing the first session of the Mysore State Representative Assembly at Mysore on October 7, 1881, expressed concern at the rapid population growth which hampered production. He felt that this resulted in increase of want and poverty.

It was towards the end of 1929 that a meeting was held in Bangalore. The venue was a palatial building belonging to one of the Ranas of Nepal who had settled down in Bangalore. Persons belonging to India, Britain and Nepal were there at the meeting. Sir Mirza Ismail, the Dewan of Mysore and Sir P. S. Sivaswamy Aiyar, a leading advocate and social worker of Madras were prominently there. They were meeting to explore ways and means of promoting birth control in the State. The funniest part of the meeting was that the Rana had no family while Sir Sivaswamy Aiyar and two others who spoke on the occasion were childless.

At the meeting it was resolved to request the State government to take necessary action to start birth control clinics in important towns.

Sir Mirza Ismail who took keen interest in the subject directed the Medical Department to take necessary action to set up birth control clinics in the Victoria Hospital at Bangalore and Krishnarajendra Hospital at Mysore.

Accordingly, the Chief Secretary to the Government of Mysore, Shri Nyapathi Madhava Rao, who later succeeded Sir Mirza Ismail as the Dewan of Mysore passed orders on June 11, 1930 for the establishment of the clinics.

The historic Order

The text of the government order was as follows :

S. O. Government of His Highness the Maharaja of Mysore, General and Revenue Departments. G.O. No. C 14353-6-Med. 263-29-3 dated Camp, Mysore, 11th June, 1930.

Birth Control Clinics

Passing orders on the establishment of in the Victoria and Maternity Hospitals at Bangalore and Krishnarajendra and Vani Vilas Hospitals at Mysore.

Letter No. C/03-5 dated the 27th March, 1930 from the Senior Surgeon in Mysore submitting proposals for the establishment of Birth Control Clinics in the Victoria and Maternity Hospitals at Bangalore and Krishanarajendra and Vani Vilas Hospitals at Mysore.

Order thereon No. G 14353-6-Med. 263-29-3 dated Camp, Mysore, 11th June 1930.

The Senior Surgeon reports that many women either on account of bodily ill-health or on account of frequent child-bearing are so debilitated that maternity is contraindicated for their own sake as well as that of their progeny. With a view to provide the necessary knowledge and the means for contraception in such cases he proposes.

(1) That the Lady Medical Officers of the Victoria and the Maternity Hospitals, Ban-

galore and the Krishnarajendra and the Vani Vilas Hospitals, Mysore, be authorised to enlighten women desirous of information on the subject for bonafide reasons and also to teach the necessary technique.

(2) The contraceptive appliances costing not more than Rs. 500 be stocked in the institutions for being supplied at cost price to those wishing to have them.

(3) That Dr. C. V. Natarajan, who has made a special study of contraception in America may be asked to cooperate with the Lady Medical officers by giving them such advice as they may need for the development of the clinics.

The Senior Surgeon further states that such advice will be given by Lady Medical Officers only to married women who require it on considerations of health or for economic reasons.

Under these circumstances, Government are pleased to approve proposals and direct that the sum of Rs. 500 required for the purchase of contraceptive appliances be set in the first instance from the provision for "European Medicines" under 21 Medical Stores and recouped from the sales later.

Sd|- N. Madhava Rao
Chief Secretary to Government

First Government Clinic

When the historic orders were issued, no one knew, not even Sir Mirza Ismail that perhaps Mysore was emerging as the first Government in the world to start a network of birth control clinics in the State.

Dr. C. V. Natarajan of the Public Health Department, who had made a special study on contraception in America, was asked to cooperate with the Lady Medical Officers by giving them such advice as they needed for the development of the clinics.

The Clinics at Bangalore and Mysore were frequented by married women who needed advice from experts. In spite of the social taboo, many took advantage of the facility provided by the State. When the second world war broke out in 1939, the work in these clinics had to slow down for want of funds.

Sir, P. S. Sivaswamy Aiyar, advocate and President, Neo-Malthusian Society, Madras who was childless himself took a keen interest in the movement and he had realised the fundamental importance of it to this country. In February 1931, he wrote to Sir Mirza thus : "I am sorry it was not possible for you to pay a visit to Dr. Marie Stopes' clinic in London. I suggested it, not because I was dissatisfied with what Mysore had done, but because I wanted you to go further..."

He felt that Mysore Government was encountering difficulties regarding the adequate number of lady doctors and midwives with sufficient experience of the technique of contraception.

Margaret Sanger, a pioneer in the world birth control movement was closely following the progress made by the state sponsored birth control clinics in Mysore. "That great social advance has been an inspiration to many" she wrote to a voluntary worker in Delhi in July 1939. She paid handsome tribute to the enlightened measures taken by the Government of Mysore. □

Primary Curriculum Renewal Project

More than four lakh students in about 2500 project schools situated mostly in backward, rural and semi-urban areas in the country are being benefitted by a Unicef-assisted project on curriculum relevant to their own needs. Called Primary Curriculum Renewal Project, it is being implemented in 22 states and 8 union territories, under the academic guidance of National Council of Educational Research and Training (NCERT)

The project is expected to help in reducing the drop-out rate in elementary schools, as it strives to make education more interesting, focussing specially on the disadvantaged sections of the community. The innovation is also to give fillip to decentralisation of curriculum-making, since it emphasizes on involving local teachers in this process. More than 1100 teachers are participating in the experiment to try-out of educational materials.

ITI declares eight per cent dividend

1981-82 has been a year of record performance for the Indian Telephone Industries Ltd. (ITI), a public sector undertaking under the Ministry of Communications. The value of production in the ITI units rose to Rs. 159.30 crores from Rs. 94.55 crores in the previous year and the profit before taxes to Rs. 17.43 crores from Rs. 1.93 crores.

All the production units of the company have shown a remarkable increase in production. While the turnover of the Bangalore complex, for the first time, crossed Rs. 100 crores mark, Naini Palhat and Rae Bareli units shows substantial increase in sales. The Srinagar unit, for the first time, recorded a turnover beyond one crore rupees by sale of telephone instruments and spares.

ITI have declared a dividend of 8 per cent on the paid up capital of the company for the year 1981-82. Shri C. S. S. Rao, Chairman and Managing Director has presented a cheque for Rs. 1,175 crores as dividend for the shares held by the President of India, to Shri A. P. Sharma, Minister of Communication.

Strengthening of PDS in North Eastern region

The Government of India have decided to assist the States and Union Territories in the North-Eastern Region to strengthen the infrastructure for public distribution system in the region. This would be done through financial participation in the State. Civil Supplies Corporations is to be set up there. The Centre will also provide assistance to these Corporations for constructing godowns. A scheme amounting to Rs 3 crores has been included by the Ministry of Civil Supplies in the Sixth Five Year Plan.

Family planning, political will

The author says that the political functionary should commit himself/herself morally, spiritually, physically, socially, emotionally and intellectually towards the uplift of the populations through family planning programme. Particularly tickets should go to only those candidates who profess faith in the small family norm. The programme should be highlighted in the political manifesto. In all the developmental programmes preference should be given to those beneficiaries who practise family planning norms. The author says that those who possess more than two children may be deprived of all powers, privilages and rights as had been done in China. The government should try to evolve a common civil code for all the communities living in India.

S. YADAVA REDDY

FAMILY Planning programme should not be treated in isolation from all other developmental works, at best, it is a socio-economic movement based on social, and cultural and, according to Mahatma Gandhi even spiritual foundations. Population education, Family Planning Programme and Family Welfare Programme cannot and must not be separated from the development process. "The entire development process will have to be made to move upwards from micro level to macrolevel in order to facilitate the inescapable role of political functionaries in this vital programme".

Aside to this, political functionary, should, at best, commit himself/herself morally, spiritually, physically, socially, emotionally and intellectually towards the uplift of the populous through population planning programme.

Following lines should be observed :

(i) All political parties, irrespective of ideological affiliations should and must give weightage while allotting the election tickets to those candidates who profess the faith on small family norm.

(ii) All political parties should affirm and highlight the paramount importance of arresting the growth in population in their political manifestos. A line or two on the National Family Planning programme is most appreciable while releasing the election manifestos.

(iii) All political functionaries should devote their attention toward the philosophy of Small Family norm and become foremost communicators in this regard.

(iv) Props and perks should be considered only to the votaries of the programme.

(v) Distribution of pattas, allotment of houses, fertilisers, cement etc., may be provided on the priority basis to those beneficiaries only who practices the ideology of small family.

(vi) Insurance of Children by the Government those who have adopted family Planning programme may be considered.

(vii) Sanction of Scholarships, guarantee of higher education to the children of beneficiaries, priority in providing employment to the sons and daughters of the adoptors of small Family, VIP treatment in hospitals, such as providing beds etc., hence preference should be given in all walks of life. These compulsive needs would accelerate the tempo and assist in bringing down the birth-rate to the desired level.

(viii) In India people do not respond to Government leaders and voluntary Social Workers that can really influence people.

(ix) But, it is irony of fate and that political leaders are totally pre-occupied with wangling positions of power and the voluntary social workers are paying attention only to superficial middle-class urban problems

(x) Malthus was the first person to suggest "the postponement of the age of marriage of females as one on the measures to reduce

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Experts from the paper presented at the Seminar on the population problems and Family Welfare organised under the joint auspices of Prakasam Institute of Development Studies. Yojana (Telugu) and State Family Welfare Bureau. A.P. on Oct. 9. 1982 at Hyderabad.

the pressure of population of land". According to Agarwala, " if the age of marriage in India rises to 20 years (against the rise of the age of girls is 18 years and boys 21 years per Government of India's legislation) as a result of social, educational and legislative changes, the birth rate is likely to decline by 30 per cent that is, it may come down from the present 40 to about 27 per thousand population".

(xi) Statistics have shown that the "Females who are married at 15 years bear on an average 6.6 children. But those who marry after 20 years of age give birth to small number of children. According to the Mysore Survey the rural Females marrying between the age of 14 and 17 gave birth to 5.9 children, while those marrying between the age of 18 and 21 gave birth to only 4.7 children".

(xii) Therefore, there is a need for further look at the rise of age of girls to 22 years, boys 25 years. This would bring rapid decline in the birth-rate of India.

(xiii) The critical age for producing children appears to be around 19 and 20 years, and there is clear reduction in the average number of children appears to take place when the age of marriage is 20 years and above.

(xiv) The reproductive span from 15 to 45 to 20 to 45 is lessened, therefore, there are less chances of producing children. The ideal age for girls and boys would be 22 and 25 respectively.

(xv) Again there is possibility of encouraging the age of boys from 25 to 28 to delay the marriages; the idea of career before the marriage would definitely strengthen the attitude of boys. This way it could be helpful in reducing the birth-rate.

(xvi) A woman of 22 years is mature and can take decisions about her future; how children she should have, naturally well-educated women prefer less children than uneducated. Legislative measure raising the age of marriage of women to 22 years and men 25 years will be helpful in building a new norm or new thinking among the coming generation. This realisation will come up only when education among rural women and girls be popularised.

(xvii) Functional literacy and compulsory education will definitely bring-down a marked change in the attitude and practices of boys and girls toward life and economic outlook.

(xviii) More and more popularisation and liberalisation of (abortion and) MRP will go a long-way in containing the growth. It may be opened to all married and unmarried, and that way, we will be saving thousands of lives from health hazards and also releasing from the clutches of cruel male-based and male-baised Society. There is a fear of 'Permissive Society' lurking in the corners—but this could be over-come by massive mass education in the country.

(xix) Rules must be liberalised by giving powers to Medical Officers and Medical practitioners to sterilize the women who come for second child to the maternity hospital or clinic.

(xx) And those parents who are willing to under go sterilisation after one child may be allowed to be operated.

(xxi) All susceptible cases, beggers, and leprosy-contacted persons should be sterilized without their consent, at the very first-sight.

(xxii) Those who possess more than two children may be deprived of all powers, privileges and rights, as it was done in the case of China.

(xxiii) There is no harm or heaven will fall, if we take bold-steps by following the example of China. "One Child for one family". Our left-oriented politicians, progressives modern-out-lookers should come our rescue.

(xxiv) Minorities should fall in line with majority in observing family welfare methods, if we want to enter into egalitarian society.

(xv) Another very important step that the politicians, press pleaders and parliament have to take up the cause of a common civil code in the country. At present the muslims have their own personal law which gives them a right to marry a second or third or fourth wife when the first is living, while the other predominent religious groups have adopted monogamy as the legal norm. Fear is expressed by the majority that they are forced to adopt Family Planning, while minority groups, specially muslims are allowed to adopt polygamy. Lastly population restraint is now imperative for the peace and tranquility of the World. The wasteful and dreadful arms race and atomic and nuetron weapons have no place if peace is to be maintained.

In this type of Gandhian development profile, population restraint programmes are not relief measures but are programmes of Societal reconstruction to achieve a just and equitable Socio-economic order not only in each country but in the world as a whole.

In conclusion, it is the ardent desire of the writer let our politicians, the pulse-beat of our people, arise, awake and stop not till to goal of prosperous India is reached. This is possible only when we take active steps to create conditions that generate motivation for a small family norm in the community, e.g., programmes aimed at reducing social and economic inequalities, education particularly education of women, improvement of social and economic status of women and promotion of democratic institutions. Ideology, principles, policies and programmes matter little unless family Planning Programme is taken in a big way.

Voluntary organisations in population control

What is so voluntary about voluntary organisations when they conduct programmes with the government funds. Voluntary organisations motivate the people, create demand for the service, take up follow up action, research, evaluation and even rehabilitation. They may also conduct parallel programmes and redefine the scope, identify new approaches and methods and experiment with new ideas.

SMT. MAMATA LAKSHMANNA

VOLUNTARY organisations have played a major role in population control programmes since the beginning. In fact in most of the countries including India and pioneers in the field of family planning and birth control programmes have been volunteers and non-governmental organisations. Though our was the first country to adopt family planning as a national programme yet we find that the population problem has not been solved and the growth rate is still quite high. In some cases the countries which started population programmes much later have been more successful. What could be the reason for this contradiction?

Ours being a democracy, family planning has been introduced as a voluntary programme and rightly so, with full governmental support. As a result, a person is going to limit the number of children only when she or he is (a) fully convinced of the desirability of having a small family, (b) free to make such a decision, (c) aware of the contraceptive techniques and (d) such facilitices are available and there is a proper follow up. We may add a few more requisite conditions such as support of the spouse, immediate family and community; assurance that the existing children will survive (in other words availability of proper medical and health services) and security in old age. Other factors which hinder or supposed to come in the way of acceptance of family planning are religion (Islam, Catholic, Karma etc.), traditional occupations (agriculture, business) joint family system (decisions are made by inlaws and elders) etc.

Type of Voluntary Organisations

Voluntary organisations may be different types depending on their objectives and membership. They may be International (Rotary club, I.P.P.F., YMCA) National (B.G.M.S., AIWC) State Level and purely local. International voluntary organisations have some common programmes and some are taken up at National, State or Local levels within the framework. Local organisations crop up according to local needs or of its members and are free to frame their constitution and take up any activity they deem proper. Workers in these organisations may be classified as (a) active volunteers (b) members (c) salaried staff. Actual volunteers usually are the pioneers who start the activity and slowly enroll members for raising funds as well as enlarging the area of activity. Members usually do not take any active part except attending important functions or meetings. Some members may take active part if they are particularly interested in some programme. When the activities increase volunteers may not have enough time, expertise or requisite qualifications to carry out the programmes and therefore some people are employed on part time or whole time basis for administration, secretariat work and implementation of the programme. Thus a voluntary organisation may have a bureaucratic set up as rigid as any Governmental organisation if proper precautions are not taken.

Objectives

Voluntary organisations may come into existence with various objectives (a) Those spousing the cause of Family Planning e.g. International Planned Parenthood Federation, Family Planning Association of India etc. (b) Those conducting other social service programmes and also taking up family planning because that is the need of also taking up family planning because that is the need of the hour and funds are available e.g., Indian Red Cross Society, Andhra Mahila Sabha (c) Some Voluntary organisations usually conduct social and cultural programmes and take up some social service programmes which may include Family Planning e.g. Rotary Clubs, Lions etc.

Experts from the paper presented at the Seminar on Population problems and family welfare organised under the joint auspices of Prakasam Institute of Development Studies Yojana (Telugu) and State Family Welare Bureau, AP on October 9, 1982 at Hyderabad.

The growth rate of Indian population has been very rapid tor the last 50 to 60 years and since independence the population has doubled. This has happened in site ot Government of India adopting population control as a National Programme in the First Five Year Plan itself and launching it with rythem method and conducting certain demographic studies. By the end of Second Five Year Plan extension approach was adopted and during Third Plan with the introduction of IUD it was felt a solution was found for spacing the births and thus controlling the growing population. Terminal methods of Vasectonmy and Tubectomy were also emphasised during this period and in the next plan when sterilisation camps were conducted on a large scale. In spite of all these efforts less than one fourth of the eligible couples are protected by family planning methods, and therefore population control still remains a gigantic task. This also means that this cannot be achieved by governmental efforts alone.

The preamble of the New Delhi Declaration on population and Development 1981 says "The Association (Indian Association of Parliamentarians) met in New Delhi on 25 May 1981 and took cognizance of the following facts :

There has been a phenomenal rise in the country's population over the last 10 years as is evident from the provisional census figures which indicate that on 1 March 1981 the population had crossed 68.3 crores (1 crore—10 million).

Expert assessments suggest the possibility of actual figures being still higher (the last decade added 13.6 crores to the population which is 2.7 crores more than the population in the sixties).

The steep rise in population can thwart all attempts to plan for improvement in the quality of life on people, particularly these living below the poverty line.

It can cause erosion of the progress already achieved, and being achieved—a situation the principal victims of which are the poor, particularly women and children,

The pressure of numbers will deny development to those very segments of the society for which development is intended and

It can also cause devaluation of human life."

Population grows when the gap between the birth rate and the death rate increases due to increase in birth on rapid decline in death rate. Population is affected also due to emigration or immigration. In the case of our country though the birth rate has fallen since 1951 the rate of decline in death date has been more rapid and as a result the growth rate has been quite high. Only in the last decade the growth rate has marginally declined from 2480 to 2475. but still the addition of population in absolute number has been higher than the previous decade. Since the population of 1981 is 683.8 million.

Role of Voluntary Organisation in Population Control

Many a times it is felt or argued that voluntary organisations may start work in a new area of field as per the need of the people and make people and government conscious of these needs. But once the Government takes up the programme they should withdraw or start work in some other areas. Secondly, what is so voluntary about voluntary organisations when they conduct programmes with government funds. To find answers to these questions let us examine the roles that can be played by the voluntary organisations.

The population of a country can be controlled when the couples decide to have smaller families. In other words while through mass media an awareness has to be created about the consequences of rapid and uncontrolled population growth to check this growth an attitudinal change has to brought about in the individuals concerned. Therefore while we need family planning clinics and services for the willing acceptors and mass media for creating general awareness, we also need workers to motivate people for accepting the small family norm, clear their doubts and answer their questions. We need people to educate the younger generation about population dynamics and create an awareness about the consequences of uncontrolled population growth. They have to be further told and convinced that individuals have a role to play at each stage by making the right decision. This may include deciding the right age for marriage, when to have the first baby or education about responsible parenthood including family life education, maternity and child health, nutrition and emphasis on quality of life. Therefore while on the one hand basic health care and family planning services have to be provided on the other awareness about availability of these services and demand for their proper utilisation has to created. Can government do it alone ? And the answer is no. Voluntary organisations may on the one hand work in the areas of motivation, creating demand for services, person to person communication, follow up, research and evaluation and even rehabilitation and support the governmental efforts. On the other hand they may conduct parallel programmes and redefine the scope, identify new approaches and methods, and experiment with new ideas. In India we get children so that they may bring happiness to the parents and family. We are worried about our old dage and the other world and beget children without thinking about the world which the child will inherit from us. Thus it is question of changing attitudes and values which can be achieved only by persons who themselves believe in the new values and are prepared to work for them. Most of these persons have to be identified, approached or given opportunities to work, which, may not be possible under Government patronage. They have to be given encouragement and help wherever they are, so that, they may work with the people intimately known to them and who respect them. These volunteers may be literate, illiterate, retired persons or young NSS volunteers. They have the inclination but they may not have the resources and therefore it is important that their services are fully utilised giving proper incentives, encouragement, training if necessary and any other help. In this task Government. Family Planning Association of India and all voluntary organisations have to work together if the goal of zero population growth has to be achieved. ☐

Population situation and minorities

A study of population on the basis of religious compositions has shown that over 50 years period (1921—71), there is a marginal increase in Muslims, Sikh, Christians, and Buddhists, but a decrease of 1.68% in Hindu population has been observed. It is noticed that fertility rates of Muslim religious groups are higher than Hindu in both rural and urban sectors. No doubt to man it appears to be irrelevant in a secular society, yet it is a fact recognised by all demographers, social scientists and geographers.

DR. S. SREEDHARA SWAMY

Although a study of population on the basis of religious composition would appear to be irrelevant to many in a secular society, it is a fact recognised by all demographers, Social Scientists and geographers that religious convictions cannot be divorced from the social life. This is particularly true in the case of Indian people as here religion and culture are very closely interlinked. Today the Indian nation is an alloy of plural, racial, ethnic, linguistic and religious groups. With a considerably long period of co-existence of a variety of entities, the Indian culture has emerged as a unit of diversities.

The Census of India taken in 1951 could not provide detailed statistical information about the religions at micro-level (district units). The Census of India conducted in 1961 was the first comprehensive operation and gave statistical information about the major religious groups and communities of the country at the district level. The 1971 census has also given the district-wise break up for religious groups. From the 1981 census, analysis of data based on religious groups is not yet readily available. However, according to 1971 census, some broad conclusions are drawn which have great implications. Following is the religious composition of Indian population.

Indian Population & Religious Groups

Religious groups	Percentage of share of Indian population					Variation in proportion in 50 years
	1921	31	51	61	71	
Hindus	84.40	84.34	84.98	83.51	82.72	+1.68
Muslims	9.57	9.86	9.91	10.70	11.21	+1.64
Christians	1.79	2.11	2.35	2.44	2.60	+0.81
Sikhs	0.37	0.46	1.74	1.79	1.89	+1.52
Buddhists	0.05	0.04	0.05	0.73	0.70	+0.65
Jains	0.51	0.50	0.45	0.46	0.47	—0.04

Source : Nafis Ahmed Siddiqui, Population Geography of Muslims of India, p. 16

It is evident from this table that while there is a decrease of 1.68% in Hindu population over 50 years period (1921—71), there is a marginal increase in Muslims, Sikh, Christians etc. Muslims are considered as the largest minority community in India. They are settled more in urban areas when compared to rural areas.

The fertility rates for various religious groups are analysed in the following table.

TABLE 2

Fertility levels as per 1978

Religious	Rural	Urban
Hindus	134.6	99.3
Muslims	149.5	121.4
Christians	104.1	66.0
Sikhs	117.9	99.4

It is seen that fertility of rate of Muslim religious groups is higher than Hindu in both rural and urban sectors.

There is a general belief that Muslims are against family planning. But this is based on wrong conception. The following data would reveal this fact.

TABLE 3

Percentage Distribution of Acceptors

Religion	1968-69		1979-80	
	Sterlisation	IUD	Sterilisation	IUD
Hindus	88.4	82.4	88.6	84.9
Muslims	5.2	7.2	5.9	7.4
Christians	1.7	2.5	3.3	2.5
Sikhs	2.4	5.6	1.4	5.5
Others	2.3	2.3	0.8	0.7
	100	100	100	100

An analysis of acceptors of various F.P. measures for whom religious breakup is available in Andhra Pradesh in the context of all India data is done here.

TABLE 4

Percentage distribution of acceptors (1979-80)

eligious groups	Andhra Pradesh				India			
	% of total pop (1971)	Vasectomy	Tubectomy	IUD	%of total pop (1971)	Vasectomy	Tubectomy	IUD
Hindus	87.6	92.8	88.9	81.3	82.7	89.2	88.4	83.9
Muslims	8.1	4.2	6.3	12.6	11.2	6.6	5.6	7.4
Christians	4.2	2.9	4.7	6.1	2.6	2.1	3.7	2.5
Sikhs	..	..	..	..	1.9	1.1	1.6	5.5
Others	0.1	.1	.1	..	1.6	1.0	0.7	0.7
	100	100	100	100	100	100	100	100

It is clear from the table that composition of population based on religion in Andhra Pradesh is slightly different from the national average. Hindu and Christian population is more, but Muslim population is less.

In respect of Vasectomy percentage of A.P. is more than India in respect of Hindus and Christians, but less for Muslims. However, in respect of Tubectomy and IUD acceptance while Hindus in A.P. are almost akin to Indian average, Muslims and Christians have recorded higher percentage. ☐

HUDCO Award for Tamil Nadu and Rajasthan

Two schemes, one in Tamil Nadu and other in Rajasthan have qualified for this year's HUDCO Award for the Best Sites and Services Scheme. The award instituted in 1978 carries a cash prize of Rs. 10,000 and a roving trophy. The purpose is to encourage the development of sites and services for housing the poorest of the economically weaker sections in the urban areas.

The two schemes adjudged best this year are the Sites and Services Scheme at Padi Eri, Madras, of Tamil Nadu Housing Board and Sites and Services Scheme at Keshopura, Kota of Urban Improvement Trust, Kota.

ITI Developed Auto Answering Equipment

The Indian Telephone Industries (ITI) has designed and developed a special equipment called Auto Answering Equipment for use in Airports to get flight information by the public on enquiry lines. This equipment can be connected to subscriber line whenever automatic announcing facility is required.

This is a micro-processor based equipment which can cater upto 10 lines. When any subscriber dials the allotted telephone number, the equipment recognises the call and switches the calling line to the pre-recorded announcement which can be of one or two minutes duration.

Seminar on population problems

The success of Family Welfare Programme depends upon the acceptance and adoptation of family planning methods, both temporary and permanent by the couple in the reproductive age groups both in the rural and urban areas. This requires sustained inputs in mass education and media activities especially organisation of seminars, Orientation Training Camps for the effective involvement of elite and also the local leadership. On October 9, 1982 a seminar on "Population Problems and Family Welfare" was organised jointly by the Prakasam Institute of Development Studies, Hyderabad, an academic & research organisation, Yojana (Telugu), Government of India and the State Family Welfare Bureau of the Government of Andhra Pradesh at A.V. College, Hyderabad. In this seminar experts from different walks of life belonging to a cross section of the society presented their papers on and discussed thoroughly the themes, namely, birth planning, sociological and economic aspect of population growth, minorities and population problem, and minimum needs and quality of life. Here is report of the proceedings.

Smt. B. Sarojini Pulla Reddy, Minister for Medical & Health inaugurated the seminar. She stressed that the message of the small family should be carried to the slums, the rural folk and the weaker sections struggling in poverty. Dr. M.r Akbar Ali Khan, former Governor, who was the Chief Guest at the inaugural session said that population control is a national and humanatarian issue and all sections of people including the minorities should accept it willingly. Dr. Y. R. Reddy, Director of Health and Family Welfare, and Dr. P. Ram Rao, State Family Welfare Officer explained the progress made in the field of Family Planning & Welfare in the State. Prof. G. Ram Reddy, Vice-Chancellor of Osmania University in his presidential address said that the population control in all its aspects should reach the masses and enable them to practise the message consistently and voluntarily.

Birth Planning

The session on the theme 'BIRTH PLANNING & FAMILY WELFARE' was held under the Chairmanship of Dr. P. Harishikesh, Addl. Director (IPP). Sri D. Munuswamy, Minister for Panchayat Raj, was the Chief Guest. Dr. Harishikesh presented the facts relating to the census data and referred to growth rate at micro level, highlighting issues such as literacy rate in rural and urban areas, birth rate and death rate etc. The prime objective is to bring down the birth rate to 21 per thousand by 2000 A.D. and also to reduce infant mortality. Towards this end the family welfare programme offers all the services to the eligible couples, medical and other according to the latest scientific practices. He stressed the importance of temporary methods of family planning and referred to the gap between awareness and acceptance and said this fact was confirmed by sociological surveys. Efforts are made to provide the services at the doorstep of the people but deplored the non-availing of services at certain places because of lack of motivation. Several orientation programmes are being conducted for the benefit of slum dwellers, school children, women and college students emphasising the small family norm. A Population Education Programme had been organised by S. V. University which included the formation of population education cells in Colleges. "India Population Project" (IPP) has been functioning in three districts, namely Chittoor, Anatpur and Cuddapah.

Chief Guest Sri D. Munuswamy, Panchayat Raj Minister, in his address said that emphasis should not be on targets in isolation but on attitudinal changes necessary for the success of programme. In the present context of our country, population growth has an adverse effect on development. Added to this there is a lack of civic sense among the people. There is therefore the urgent need to educate the masses, especially the rural folk. The Minister referred to the attitude of different religious groups and hoped that Seminars like the present one would be held among all the groups of our community so that a proper climate is created for the better family living and welfare.

Prof. M. G. Bhasin of Dayanand College of Arts & Science, Solapur presented a paper on 'Birth Planning in India—A future Task'. He referred to basic human needs and the interactions between the 'I' and the 'We' resulting in population growth. He gave a graphic presentation of the population growth and problems indicating direction, strength and capacity to explode. The problem is the outcome of complex and manifold interactions between geographic, historical, economic, social, cultural, religious and political factors. Voluntary agencies have to play a catalytic role in family planning supplementing the Government efforts. Tracing the population history and population policy in our country Prof. Bhasin stressed the quality of life of the masses. We should develop a model with the important determinants of environmental factors such as leadership administration, resources, policy and planning. Family services have to be interlocked with environmental factors in order to secure zero population growth and the accent should be on strong commitment to the targets.

Smt. Mamata Lakshmanna, Population Education Officer, presented a paper on 'Role of Voluntary Organisations in Population Control and Family Planning'. Voluntary agencies create an awareness of the problems of the family and help population education. The small family norm should be an important part of family welfare programme. Religion is projected more as an excuse in the way of population control and in fact it is not hindrance. There are in reality certain other hinderances such as attitudes of elders in joint family system which have to be identified and tackled. Population education should be taken up at school level itself and spread to all sections of people with vigour and commitment.

Dr. K. Suresh, President, Society Community Development, highlighted the role of medicos in family welfare. He said the emphasis was on sterilisation as the method of family planning in sixties. Spacing is an equally important aspect in family ordering. Uptodate technology should be adopted by medicos working in the field.

Smt. M. V. Subbamma, of Mahila Abhyudaya Samstha citing her experiences as a social worker in the field of family planning for several years, posed the question as to why the programmes have not been successful despite massive expenditure. Women's education plays a key role in controlling population growth. She advocated compulsory family planning.

Dr. T. R. Sharma of University of Hyderabad stressed the need to know the relationship between education and population growth. Sri N. Ramamurthy, Assistant Secretary (Retd.) referred to the comparative growth rates among Hindus, Mulsmis etc. during 1971—81 period and felt that Muslims perhaps are adopting a negative attitude towards birth control. Sri B. Gundal Reddy, Lecturer, V. V. College suggested methods to reduce population growth such as compulsory sterilisation legislation of abortion, raising of age of marriage etc. Dr. Harishikesh summed up the discussions as the Chairman of the session and said that we should think of short-term as well as long-term problems and consider solutions to them.

Minorities

The third session on 'MINORITIES AND EDUCATION ASPECTS OF POPULATION' was held under the Chairmanship of Dr. R. V. Chandrasekhara Rao, Professor of Political Science, University of Hyderabad. The Chairman referred to the theme of educating the people about the population problem.

Prof. C. Lakshmanna, Department of Sociology, Osmania University who delivered the keynote address pointed out that there is an impression that the Muslims do not accept the small family norm easily and that they are reluctant. But even in majority religion all Hindus also have not been accepting it so easily and readily. Also, the problem of population growth has to be viewed in the context of economic development. We should undertake studies regarding acceptance or rejection of small family norm in sensitive areas. He made a distinction between hard and harsh decision and said there is the need to take hard decisions today and they should be made acceptable. Indian Society, it may be noted is quite materialistic in reality. Political parties, in power or aspring to come to power feel shy to tackle the problem because they view the problem on population from the point of safeguarding their votes. He observed that greater responsibility devolved upon leadership. We do expect stronger political will among the political parties irrespective of their creed.

Sri D. V. Krishna Rao, Honorary Adviser, Urban Family Welfare and Postpartum Centre, Andhra Mahila Sabha presented an interesting paper on 'Son theory and Small Family norm'. The theme is highly controversial in view of the prevailing belief among the farming class that a son is a must. Child mortality in rural areas is double when compared to urban areas. The solution to this dilema lies in adopting a son from baby banks. He also referred to the problem of security in old age. There should be more Homes for the aged and old age pensions.

Dr. S. Yadava Reddy, District Extension and Media Officer Presented a paper on 'Political Demography'. He referred to the role of government machinery in tackling the problem and role of leadership in controlling population growth. There is political timidity prevailing in the country for different reasons. He suggested among the other things depriving persons having more than 2 children of any political status or power.

Sr. M. Arunachalam, Extension Officer, All India Radio, Hyderabad in his paper on 'Family Planning Education' referred to different approaches and responses to them. He advocated the education approach. The concept of small family norm has to be well explained in a social as well as family context. Mass Media should be involved in creating awareness among the people in their own language, tradition and culture.

An interesting discussion followed after the papers were submitted by learned speakers. Mr. Nasif Alix Khan, Lecturer in Economics, Anwarul-Uloom College said that minorities might be particular of their numbers in the light of communal clashes, but they also consider the problem from the economic point of view, namely the distribution of wealth. He said occupational structure has to be taken into account. Reducing the rate of dependency on agriculture and increasing rate of industrialisation, he said would check population growth.

Population of TN—A study

Population explosion is the root cause of economic problems in India and so is the case with Tamil Nadu. In a span of just ten years from 1971 *to* 1981 *the population of TN went up from* 41.20 *million to* 48.29 *million. Implementation of various developmental plans has ushered in some progress in various fields but the increase in population has annuled the same.*

A. MARIARAJ AND M. SEBASTIAN*

THE problem of population is at the root of all the economic maladies of India. Here is a study to show how the growth and distribution of population in Tamilnadu influenced the regional economic problems of the State. Tamilnadu stands seventh in population in India. According to 1981 census the population of Tamilnadu is 48,297, 456. Population of Tamilnadu was 19.3 million in 1901 and has grown upto 48.3 millions in 1981. In 80 years about 29 million people have been added to the State population. Since 1941, in each decade the growth rate had been two digit figure and in 1961 it was over 22 per cent. The low rate of population growth was reported between 1911 and 1921. The growth rate of population varied from a maximum of 22.30 per cent during 1961—71 to a minimum of 3.47 per cent in 1911—21; the growth rates for 1901—11, 1911—21 and 1941—51 had been above the national growth rate of population. But the overall perçentage for eight decades from 1901 to 1981 has been less than the national growth rate of population.

Distribution

THE POPULATION OF TAMILNADU, as recorded in 1971 census, was 41.20 million which was distributed over 1,30,069 sq. km. giving a density of 317 persons per sq. km. It increased to 371 per sq. km. according to 1981 census in ten years. Madurai is the most populated district of Tamilnadu. In 1981 census also, Madurai district tops the list accounting for 9.38 per cent of the total population of this State. North Arcot district comes a close second with 37.6 lakhs of people. Nilgiris is the most sparsely populated district with a density of just 194 persons per sq. km. The most densely populated district is Madras, being the capital district. A unique feature is that women outnumber men in three districts viz. Ramnad, Tirunelveli and Pudukkottai. The sex ratio for Tamilnadu was 978 females per thousand males which is higher than the all-India figure of 930 in 1971.

Regarding literacy, Tamilnadu ranks third in the country next to Kerala and Maharashtra with a percentage of 45.78 in 1981 from 39.46 in 1971. Percentage of literates for the nation is 36.17 in 1981, and that of Tamilnadu is nearly 10 points more. In TN the percentage of literate males has risen from 51.78 to 57.19. The number of women literates have gone up from 26.86 to 34.12 in 1981. Among the districts, Madras stands first in literacy. Among other districts Kanyakumari stands first, these positions being the same as in 1971.

Modern Urbanisation

FROM THE POINT OF VIEW of the place of residence, population is broadly distributed over the rural and urban areas. With the onset of the industrial revolution, the process of modern urbanisation began. Though India is predominantly rural in character, in 1971, 109.1 million of India's population lived in urban areas. At present, Tamilnadu has six cities and 4 urban agglomerations with a population of more than 1,00,000. There are about 15,735 inhabited villages in the State accordindg to 1971 census. In 1961, 73.3 per cent of Tamilnadu people lived in rural areas, while the figure got reduced to 69.7 per cent in the next decade. It shows that there had been a gradual migration of the rural people to the urban centres due mostly to economic factors. The growth of population in each age group is gradual though the growth rate is more in the age-groups 0—4 and 10—14. Conventionally, the population in the age group 15—64 is considered to be the working population; that below 15 as the young dependents and that above 65 is considered to be old dependents. The young and old dependents constitute the over-all dependents of a country. This dependency ratio of Tamilnadu in 1971 was 66.07 against the All-India dependency ratio of 81.36.

The foregoing analysis is a stuy of facts. When we relate this data analysis to actual situation, we cannot fail to notice the economic impact. A close look at the sex ratio shows that it is in the backward districts of Ramnad Pudikkottai and Tirunelvali that women outnumber men. It is in these districts that there is low density of population and illiteracy is very high. It goes without saying that these demographic factors have affected the economic progress of these regions, besides lack of natural endowments.

Family Welfare Programme in 1982

THE year 1982 has seen a significant step-up in the performance of the Family Planning Programme. The number of sterilisation operations reached about 34 lakhs showing an increase of 45 per cent over the corresponding figures of 1981. The IUD insertions at 9 lakhs were higher by 32 per cent as compared to the previous year. The number of Oral Pill users as on October, 1982 were higher by 41 per cent.

Among the States, U.P. which showed poor performance in sterilisations since 1977 recorded steady and significant improvement in 1982. With 3.3 lakh sterilisations, Uttar Pradesh achieved an impressive increase of 206 per cent over the previous year. Assam showed a commendable improvement of over 200 per cent in sterilisation, Madhya Pradesh 70 per cent, Punjab 88 per cent and Haryana 105 per cent. Despite having achieved a very high couple protection rate of about 37 per cent, Maharashtra has continued to lead all the States by performing over 5.3 lakh sterilisation during the year.

Laparoscopic Tubaligation

Introduction of Laparoscopic Tubaligation in a big way, training of personnel for this procedure and equipping the States towards this end some of the major achievements. About 10 lakh sterilisations were performed by this technique alone. The figure of 9 lakh IUD insertions during 1982 is an all time record under this head.

Punjab continued to lead and performed 1.3 lakh IUD insertions during the current year showing an increase of over 160 per cent.

The year 1982 also ushered in a pattern of close involvement of various segments of society in the Family Welfare Programme so as to make it a people's programme. Purposeful consultations at the National level were held with the representatives of Voluntary Organisations, Industrialists, Trade Union Leaders, Municipal Commissioners of all Civic Corporations in India, Film Industry people, Editors of local language papers, Scientists etc.

Population Advisory Council

The Government also constituted a Population Advisory Council under the Chairmanship of Union Minister of Health and Family Welfare with a view to analyse the implementation of the Family Planning Programme and advising the Government suitably on new ideas and strategies and achieve the demographic goals set by the Government. Arising out of the deliberations of the first meeting of the Council in July, 1982, Working Groups have been set-up for specified areas, namely (1) Community participation, (2) Communication strategy, (3) Incentives/disincentives, (4) Organisation and Management and (5) Research and Technology. ☐

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Family welfare programme in Maharashtra

B. N. MURTHY

THE NEW 20-POINT ECONOMIC PROGRAMME announced by the Prime Minister lays great emphasis on the implementation of the Family Welfare Programme in our country. The Prime Minister has stressed the need for making the Family Welfare Programme a people's movement so that people voluntarily accept the 'small family norm'.

The latest Census Report makes a pointed reference to the fact that at the present rate of growth of population we are adding an 'Australia' every year to our country. In order to check the population growth and to ensure that the fruits of planning and development benefit all the sections of our society, the Government of India has adopted the Family Welfare Programme as an official programme since 1952.

Ten National Awards

The State of Maharashtra has been in the forefront in implementing the Family Welfare Programme. The State has received 10 National awards so far for the successful implementation of this programme. The message of small family norm is steadily spreading in the State.

The following facts are of particular interest :

(a) Maharashtra has taken up the Family Welfare Programme in the year 1957-58 itself. i.e. about 25 years ago.

(b) From the year 1957 to 1981, 52 lakh Vasectomy operations were performed in the State. Five lakh I.U.Ds were inserted and 1.72 lakh couples were using other methods of family planning.

(c) During the year 1981-82, the State has achieved a target of 2.95 lakh Vasectomy operations and it has now set for itself a target of 4.73 lakh sterilisations during the current year.

(d) By October 1982, 2,35,000 sterilisations were completed and by the end of the current financial year, the target will be achieved if not exceeded.

(e) In respect of I.U.D. the achievement has so far been very impressive in the sense that the target of about 11,000 I.U.Ds has been almost doubled.

(f) As regards the number of Family Welfare Camps to be held during the current year, while the target has been 1,248 the actual number of camps has exceeded the target in as much as 1,606 camps have already been organised.

Welfare of Children and Nursing Mothers

The Family Welfare Programme is a comprehensive one in the sense that it has to take care of the welfare of children and nursing mothers too.

In the State of Maharashtra, an integrated Child Development Service Project has been taken up in two urban blocks, 13 rural blocks and 14 tribal blocks during the current year. The purpose of this project is to ensure the nutritious and health needs of children in these blocks and to reduce the incidence of mortality. Suitable guidance is given to mothers to look after their children properly and to take care of their own health. A special nutrition programme in urban slums which has been taken up for the benefit of the children has been extended to cover 2.80 lakh children and 0.75 lakh women in the urban blocks.

Rural Health Service

With a view to achieve the goal "Health for all by 2000 AD" an integrated approach is being followed in Maharashtra by providing the necessary preventive and curatory measures particularly in the rural areas of the State. These measures include provision of safe drinking water, improvement of sanitary conditions; health education and nutrition. The objective is to have one trained 'Dai' for each village; one trained health guide for every 1,000 people; one primary health sub-centre for every 5,000 population and a primary health centre for every 30,000 population in the State. The coverage of treatment of infectious leprosy is now 86% of the affected. B.C.G. vaccination programme has also been intensifed. Necessary infrastructure has already been provided upto the level of primary health centre. So far, 600 eye-camps have been organised.

Ultimate Aim—Happy Family

The success of Family Welfare Programme depends on the awareness we create among the common people, middle-class families and rural folk in particular. We have to impress on the minds of our people the benefits of small family norm. The Government on its part has made available a number of incentives and financial benefits for the effective implementation of small family norm. A small family ensures happiness of the parents and the children. "Happy Family" is the ultimate goal of the Family Welfare Programme. ☐

Better nirodhs now from Hindustan Latex Ltd

The Hindustan Latex Ltd., a public sector undertaking manufacturing male condoms has shown excellent results last year. The company has plans to modernise the existing machinery at a cost of Rs. 1 *crore and set up a new plant with installed capacity of* 300 *million pieces, at an outlay of Rs.* 15 *crores, utilising the Japanese technology, one of advanced technologies of the world. The new factory is expected to utilise Japanese technology, incorporate maximum automation, and improvements in the process machinery which will enable the company to produce very fine condoms of* 0.03 *mm thickness compared to the present* 0.06 *mm thick condoms. The Hindustan Latex Ltd., has registered as all time high profit of Rs.* 54.76 *lakhs in* 1981-82, *and produced* 265.7 *Million pieces of condoms against the target of* 240 *million pieces. The company exported over* 30 *million pieces of* **Rakshak** *condoms to USSR during last year. The Meteorological Balloon Plant which had been closed since* 1978 *is operating now has recently bagged an order for* 16,000 *pieces of balloons from Indian Meteorological Department.*

HINDUSTAN Latex Limited (HLL), a Public Sector Enterprise under the Ministry of Health & Family Welfare of the Government of India, was set up on April 5, 1969 to produce 'NIRODH' for the Nation's Family Planning Programme. The first factory for the manufacture of these male contraceptive condoms was set up at Trivandrum in Kerala State with Japanese collaboration. The production capacity at inception was 144 million pieces of male contraceptive sheaths. This was doubled in 1977. From inception the company has manufactured nearly 2000 million pieces.

Process

The manufacture of Condoms involve four main stages : (i) Compounding (ii) Moulding (iii) Vulcanising and (iv) Electronic Testing and Inspection (Quality Control). In compounding centrifuged, high grade concentrated natural rubber latex is used as raw material after stringent laboratory tests. This is fed into the mixing tank where it is mixed with chemicals. After heating the compound it is cooled to room temperature, centrifugally clarified and discharged to the ageing tanks for ageing. The aged latex is then fed into the charging tanks. After severe laboratory tests the latex is supplied from here to the moulding section at controlled intervals

Moulding & Vulcanising

The moulding section forms the heart of the factory. Moulding of high quality rubber contraceptives is a highly sophisticated and automated process. Compounded and purified latex is fed into the dipping tanks of the moulding machines. The moulding machine has a variable speed conveyor carrying several glass moulds. These glass moulds are immersed in the latex bath and withdrawn immediately at uniform speed. After two dips, the head of deposit is rolled by automatic edge rollers. From here with the help of a forced jet the condoms are stripped off the glass moulds and sent to the dehydrater where it is partially dried. These partially dried condoms are then mixed with a dehydrating agent and vulcanised. After vulcanising and quenching, the condoms reach the electronic testing section for rigorous quality checks.

Electronic testing and inspection (quality control)

The electronic testing machine consists of a conveyor belt on which metal moulds are fixed and is driven by a motor. The condoms are inverted manually over these moulds. The most effective screening of each condom is carried out on this machine. Later the condoms are stripped off the moulds after testing by a sponge wheel. There are two points of stripping, one for the good condoms and other for the defective ones. Collectors at the two stripping points collect the good and rejected condoms separately.

The automatic electronic testing machine at HLL is one of the advanced and efficient machines of its kind in the world with a very high level of sensitivity to detect defective condoms and automatically reject them. Condoms even with as much as a pin-hole would be rejected by this machine. Several other tests are also carried out to ensure a very high quality gradient. Other tests include dimensional analysis, appearance test, water test, evaluation of accelerated ageing of condom, accuracy of packing machines, pre-despatch batch-wise sample tests etc. Periodical tests are conducted throughout the manufacturing stages. These stringent quality control tests carried out at HLL conform to those specified under schedule 'R' of the Indian Drugs and Cosmetics Act. Finally, rigorous quality checks are also carried out by experts from the Inspectorate General of Stores under the Directorate General of Inspection of the Ministry of Defence at the behest of the Union Health Ministry. It is only after their clearance, they are finally sent for laminated strip/square packing.

Condoms are then siliconised to give it a special glance, transluscence and durability and individually packed in laminated aluminium foils and hermetically sealed to keep them safe for over long periods of storage.

Progress

HLL has registered spectacular progress and growth during the past one year and recorded an all time high profit of Rs. 54.76 lakhs for 1981-82. The company recently declared a five per cent dividend on the paid up capital, to be paid to the Government of India. This was possible as a result of the excellent working results the company achieved during last year.

During 1980-81, the company had achieved only a meagre production of 105.23 million pieces of condoms. The company had been incurring heavy losses during the previous years. The highest production ever achieved during previous years was 182 million pieces.

But in 1981-82, the company has achieved an all time high production of 265.7 million pieces against the target set of 240 million pieces. This is a singular achievement in that the company has utilised over 110 per cent of installed capacity.

For the excellent working performance of last year the company paid a good performance award of per cent of wages to its employees apart from the minimum statutory bonus of 8⅓ per cent (at a total of 20 per cent).

The Company has fixed an ambitious production target of 300 m. pcs. of condoms during 1982-83 and expect to make a profit of Rupees one crore during this financial year. The company is hopeful of receiving from the USSR, as during last year, an order for about 30 million pieces of 'RAKSHAK', its export quality lubricated condoms, this year also.

HLL recently introduced in the internal market 'SHARE' lubricated condoms, a superior high quality prophylactic for men, which is today being sold in large number all over the country.

The company's Meteorological Balloon plant which had been closed since 1978 was put back into operation this year. It has since completed successful trial tests. The company has recently bagged an order for 16,000 pieces of meteorological balloons (875 gms) from the Indian Meteorological Department.

Strict measures to control wastage, and for the optimum and effective utilisation of latex, chemicals, furnace oil etc. have helped to streamline production. For instance, more than 30 per cent reduction in consumption of latext and furnace oil has been achieved. These factors have within the span of a year contributed to the higher productivity and better operating results achieved by the company.

Modernisation

Hindustan Latex has now planned for modernisation of its 14 year old existing plant and machinery and for setting up a new plant with installed capacity of 300 million pieces, of male contraceptive condoms. The Central Government has in principle approved this project being set up with the latest technology.

The new plant, with estimated outlay of about Rs. 15 crores is expected to be set up adjacent to the existing plant, at Trivandrum and is expected to go on stream within two years of formal approval of the project report by the Central Government. Along with this, the Central Government's approval has been sought for modernisation of the existing plant at a cost of about Rs. 1 crore. The new plant will undoubtedly make a significant contribution to the development of Kerala, Trivandrum region in particular, which has been industrially backward.

The Technical Team has recommended the utilisation of Japanese technology, one of the most advanced process technologies in the world for the manufacture of prophylactics, incorporating maximum automation and improvements in the process machinery, which will enable the company to produce defect-free condoms at a much faster rate.

The new plant is expected to produce condoms of a very fine and thin variety, of a thickness of 0.03 mm (thinner than skin) compared to the 0.06 mm thickness of condoms manufactured presently by the company. Holland have offered the most advanced Automated Electronic Testing technology—a cent per cent fool-proof system—for screening defective prophylactics. They have also offered the 'ultrasonic mould washing system'—a burshless soapless washing technique—the most modern system, and the 'gamma ray drying process' that reduces energy consumption, as well as dependence on furnace oil. It is also planned to introduce in a phased manner a computerised quality control system, that will ensure a very high quality of the product manufactuded at the new plant. USA have offered the latest packing and cartoning machines.

Several schemes have been launched for the welfare of workers of the company. Alongwith the expansion plans, it is planned to construct a HLL Township providing quarters for a long cherished desire of several workers who have no land or building of their own. Further, a staff bus service for the transport facilities of workers is also being planned. The factory which had a history of chronic labour troubles and recurring heavy losses is now working with perfect industrial harmony, recording remarkable achievements in production and profits.

Hindustan Latex has now come of age, having proved itself, as a model public sector undertaking

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Curbing population growth in Republic of Korea

SOHN WOO—HYUN

A SPECIAL broadcast message greets commuters in Seoul's jampacked subway trains during the morning rush hours. The message reads, "Consult your local health center to plan a family", part of the government campaign to curb population growth.

With over 39 million people on about 98,955 square kilometres of land, Korea is claimed by some demographers to have the highest population density rate in the world on the basis of inhabitable space, which a hilly topography significantly curtails.

By the year 2000, Korea's population is projected to increase by at least another 10 million or one fourth of the present population, provided the government family planning programme succeeds.

Whether the official projections turn out to be tenable or not, sociologists and demographers are concerned about the adverse implications further population increases could hold for the quality of life in the resource-poor country. Their concern is particularly justified when one takes into account the expectations being created and reinforced with the rapid industrialization of this society.

What aggravates Korea's demographic situation is the worldwide phenomenon of urban congestion. The Korean experience, however, is rather unique in that the capital city of Seoul has been more or less the sole target of migrators from the countryside.

According to official statistics, Seoul's population increased from only one million in 1953 to 8.5 million in 1980, the latest year for which figures are available. The increase is described by some local demographers as "un-precedented."

While the population of Seoul alone accounts for 22.3 per cent of the country's total inhabitants, that of the greater Seoul area, which includeds the city's thrivingsuburbs, comprises 13,542,000 people or 35.5 per cent of the country's population according to an official census made in 1980.

Most of the country's best institutions of higher-learning are concentrated in Seoul, which in a country, where education has been traditionally highly valued, accounts in part for the increasingly overcrowded capital. In 1979, according to official statistics, Seoul accounted for nearly half or 47.7 per cent of the nation's college and graduate students.

Demographic disparity

Seoul is also the center of the nation's political, economic and cultural life, and offers better employment opportunities than elsewhere in the country.

All in all, the old saying, "Send your children to Seoul and your cattle to Cheju Island (Korea's southern most island)", still holds true today.

This exodus of young men and women from rural areas and the ever-bulging census figures have triggered fears that the subsequently reduced agricultural productivity would lead to a food supply crisis.

In an effort to remedy the demographic disparity between urban and rural areas, the Korean government initiated a 10-year programme in 1982, which aims at, among other things, promoting jobs and improving medicare and educational system in provincial cities.

The plan also encourages the establishment outside the Seoul area of factories and other auxiliary facilities needed to support the 1988 Seoul Olympics to avoid instigating and further migration of workers and their dependents.

The success of this programme, however, remains to be seen since it would require the consistent, determined and well-coordinated efforts of policy makers to curb the historical trend, which has been gaining momentum over the past century.

Urban congestion is but one aspect of Korea's demographic dilemma which the Korean government began to tackle systematically in 1962 as part of the first five-year socio-economic development plan aware of the pertinence of demographic factors to the development effort.

Two approaches have been adopted in the government's efforts to integrate population dynamics into the development process-overseas migration and planned parenthood.

From 1962 to 1981, according to official statistics, 453,000 Koreans migrated overseas, with over 80 per cent of them going to the United States, according to Cho Nam-hoon, senior researcher of the Korea Institute for Population and Health.

Despite the 1981 liberalization of overseas travel for Koreans, Cho says, Korean migration overseas is not expected to grow significantly in view of the "unresponsiveness" of recipient countries.

The planned parenthood programme, the major thrust of the Korean government's population policy, however, has proved over the years to be an effective. If costly, approach to the country's demographic challenge.

The average fertility rate of Korean Women—the average number of children each woman bears—has

(contd. on page 56)

National population policy

IN 1975-76, it was recognised that in order to promote family planning at a faster pace, it would be necessary to involve in the programme other development departments of the Government both at the Centre and in the States, and all organisations which commanded credibility and influence with the people and were interested in the public welfare. With this objective, a comprehensive National Population Policy was evolved in April 1976. The principal assumption behind the National Population Policy was that population explosion was an offshoot of poverty and had to be tackled as a part of overall design for better life. Clear demographic goals were defined under the policy. To reach them, as well as to integrate family planning with the overall strategy of socio-economic development, a number of programmes were initiated as part of the policy.

Some of the more important features of the National Population Policy of 1976 are :

(a) increase in the age of marriage from 15 to 18 years for girls and from 18 to 21 for boys ;

(b) freezing of the population figures at the 1971 level until the year 2001 for purposes of representation in the National Parliament as well as for allocation of Central assistance, devolution of taxes, etc. to the States ;

(c) liking of a part of Central assistance to the States for their development with their performance in family planning ;

(d) greater attention to girl's education ;

(e) proper place for population education in the total system of education ;

(f) involvement of all Ministries|Departments of the Government in the family planning programme ;

(g) increase in monetary compensation for sterilisation ;

(h) institution of group awards as incentives for various organisations and bodies representing the people at local levels, including Zila Parishads and Panchayat Samities ;

(i) intimate association of voluntary organisations particularly those representing women, wth the implementation of the programme ;

(j) greater attention to research ; and

(k) greater use of motivational media, particularly in rural areas, for increasing acceptance of family planning. ☐

> "Our aim is not merely to curb the growth of population but to have happier and healthier families which, in our circumstances, means smaller families. We are disturbed that our recent census shows an alarming increase. It is small satisfaction to know that some of this is due to people living longer and not to a higher birth rate. In fact our family planning programmes are estimated to have prevented 29 million births in the last decade."
>
> **—Prime Minister Indira Gandhi (in her key-note address to the 34th World Health Assembly at Geneva).**

Table—1

Indian Investment in Family Planning (1951—85)

Five year Plan Period	Family Planning outlay (Rs. in crores)	Family Planning outlay as percentage of total public sector outlay	Actual Expenditure as per cent of allocation
First Plan (1951-56)	0.65	0.03	21.5
Second Plan (1956-61)	4.97	0.10	43.5
Third Plan (1961-66)	27.00	0.43	92.1
Fourth Plan (1969-74)	315.00	1.98	88.2
Fifth Plan (1974-79)	497.00	1.26	98.9
Sixth Plan (1980-85)	1010.00	1.12	—

(Source : The Economic Times, Calcutta, 14th July, 1982)

Table 2

Family Planning Expenditure as per cent of total Government Budget and per capita expenditure on Family Planning for selected Asian Countries (1978)

Country	Year	Family Planning expenditure as per cent of total government budget	Per capita expenditure on family planning in U.S. cents (from all sources)
India	1978	0.52	20
Bangladesh	1976	2.4	18
Indonesia	1978	0.2	29
Iran	1977	0.06	92
Korea, Republic of	1978	0.18	49
Malaysia Peninsular	1978	0.11	68
Phillippines	1978	0.4	51
Singapore	1978	0.1	52
Taiwan	1978	0.1	21
Thailand	1978	0.07	15.3

(Source : Ibid)

Table—3

Family planning expectations (Levels of achievements in the Sixth Plan Period for India) (1980—85)

Year	Sterilisation	I.U.D. (in millions)	Equivalent C. Cloral pill users	No. of equivalent sterilisations
(1)	(2)	(3)	(4)	(5)
1980-81	3.00	0.80	5.50	3.57
1981-82	4.00	1.10	5.50	4.67
1982-83	4.50	1.50	7.00	5.39
1983-84	5.00	2.00	9.00	6.17
1984-85	5.50	2.50	11.00	6.94
	22.00	7.90		

(Source : Ibid)

(*contd. from page* 16)

10. The list of incentives covers rebate in income-tax in respect of an assessee with one child and an assessee with two children, concessional rates to persons with one or two children having adopted terminal method and also priority in supply if agro-industrial inputs, fifty per cent rebate in revenue and water tax for those having two children with terminal method and normal rates for others. Discount of electricity bills or families with two children having adopted terminal method.

11. Out of turn allotment of taxis and three and two wheeler scooters are envisaged in this proposal.

12. Certain percentage of seats in schools, colleges and other professional educational institutions should be reserved for the children of the families, who have adopted terminal method after two children.

13. All political parties should be persuaded to reach a minimum code of conduct for allotment of tickets for all elective positions from village panchayats to parliament level. Those having more than two children should not be favoured with party nomination.

These and other incentives and disincentives should be applicable from the prospective date duly fixed by the Government and not from retrospective dates.

(*contd. from page* 28)

detail at the position in each individual state, analyse their demographic record in the light of the most progressive among them, and seek to apply the lessons learned from such an exercise. And this requires a thorough study of the demography of each individual state in respect of the role played by historical, economic, sociological, cultural, developmental and political factors, with a view to drawing lessons for remedial demographic policy. Demography is essentially an inter-disciplinary subject and it falls more in the realm of art of historical and comparative experience than of theory and scientific laws. This is what we should apply to our study of individual states if we want to tackle successfully our population problem at the national level.

In concluding, I must draw pointed attention to the priority requirements of four states which have a consistent and obstinate record of demographic growth above the national rate, namely, Rajasthan, Madhya Pradesh, Gujarat and Haryana; and now Uttar Pradesh, because or its size and the reversal of its previous trend of five decades. Kerala, Maharashtra and Tamil Nadu could well gige lessons in reducing fertility to the other states; and so also Karnataka, in spite of the recent rise in its population growth rate above the all-India figure. Every state in the Indian Union has its own lessons to offer, either of a positive or negative character, with regard to demographic policy in the light of its individual demographic experience. It is now for our demographers and policy makers to gain from this inter-state experience for dealing with the national problem.

(*contd. from page* 54)

changed from six in 1960 to 2.7 in 1982, according to official statistics, while the net population increase rate has dropped from 2.84 per cent in 1960 to 1.67 per cent in 1980.

From 1962 to 1981, the Korean government spent a total of 145.5 million U.S. dollars on planned parenthood programmes. The lion's share or more than two-thirds of that sum was used to distribute contraceptive pills and devices, to administer sterilization operations and to pay the personnel involved.

The preference for sons, however, still lingers in the minds of many Koreans, who have traditionally counted on sons for their livelihood in old age.

Despite the current government slogan, "Stop at two, regardless of sex," only 41 per cent of women with only two daughters practice birth control, compared with 71 per cent of those with only two sons, the statistics show.

There is also a fertility gap between urban and rural areas. In 1982, according to the statistics, the total fertility rate of urban women averaged 2.4 against 3.3 of rural women.

The official campaign slogan, "A daughter well raised is better than a son," does not seem to have convinced all the Korean housewives yet, despite the changing social modes of Korean society.

Wielding slogans on the one hand, the Korean government has worked out legislation, which will limit medical insurance coverage as well as paid maternity leave for working women, to deliveries of the first two children, starting January 1, 1983.

Saying that such measures apply primarily to middle class urban families, Cho calls for legislative action more relevant to rural households in the lower income brackets, such as social security benefits for the aged, which would reduce the dependency on sons in the rural areas.

Most of all, Cho says, it is about time that the Korean government's slogan be changed to "Stop at one, regardless of sex" as is the case with mainland China, which, with about one billion people, is the World's most populous nation.

Age-old respect for the aged in India

Traditionally the aged are given respect in Indian society. But the various facets of advancement have been weakening the psychological bonds between the young and the old. Before the situation goes out of hand something must be done to slowly rehabilitate the aged.

IN INDIA the elderly have been traditionally assigned a place of honour and respect as exemplified by religion, social values and norms, and the social and economic organisation of society. With advancing years, the process of withdrawal from management and involvement in day to day affairs set in, since disengagement from worldly life at the later stages of the life cycle was the expected norm though in practice this could be delayed depending on availability of other members in the family to take over the responsibility. The transition, however, was voluntary and smooth so that the old did not feel being edged out. The elderly, particularly the females, played a valuable role in the socialisation of young children and in transmitting social and cultural heritage. There are, however, some emerging stresses and strains which, in varying degrees, tend to increase the vulnerability of the old. The forces of modernisation, technological change, mobility and the explosion in the lateral transmission of knowledge are making changes in life styles and values to adjust to the changing circumstances. The shortage of housing accommodation in the cities and their high rentals act as a severe constraints in common residence of the aged with their sons, particularly for migrant families. The migration of the younger people increases the vulnerability of the old who stay behind, particularly for families which do not have independent-production assets (land, livestock or household industry) and are dependent primarily on their labour. Increasing employment of women outside the home in offices and in factories implies that they can spend less time for taking care of the older members, specially those who require constant care. Further, the relatively independent status acquired by a white collar woman worker who has her own career aspirations sometimes leads to demands on the husband for setting up a separate nuclear family. There is now a greater investment by the family on education and upbringing of children which affects the intra-family distribution of income in favour of the younger generation. The joint family system, an important sustaining factor of which was the common ownership of the means of production (primarily land), is gradually breaking down. This has increased the vulnerability of the old, particularly those with no children or immediatekin, as there is lesser readiness in discharging long term social obligation towards such members.

60 plus on the increase

India's large population base (548 million in 1971 and 685 million in 1981) accounts for a sizeable number of people 60+even though the proportion continues to be small when compared to the developed countries. However, due to increased life expectancy and steady decline in the birth rate, the proportion of people 60+in the population shows a definite increasing trend—from about 5 per cent projected to 5.97 per cent in 1971 and 6.91 per cent projected for 1996. The number of persons 60+in 1901 was about 12 million. In 1951 it increased to about 20 million representing a 67 per cent increase. In 1991 this is expected to increase to about 51 million representing about 155 per cent increase over 1951. The rate of increase of the population 60+is higher than the rate of increase in the general population as revealed from the following data :—

	Percentage increase in total population	Percentage increase in population 60+
1951-61 . .	21.51	22.40
1961-71 . .	24.80	32.32
1971-81 . .	24.75	31.60 (projection)

This trend is expected to continue in the coming decades as is evident from the following data (projections) :

Decade	Percentage increase in total population	Percentage increase in population 60+
1981-91 . .	18.89	38.02

The main reason for this trend is the increase in expectation of life at birth from 23.63 years for males and 23.96 years for females in 1901 to 60.1 years for males and 59.8 for females projected for 1991-96.

The sex ratio (number of females per 1,000 males) tends to get even particularly in the higher age group of the elderly but is still not weighted in favour of

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Excerpts from the Status Paper presented by the Indian delegation to the World Assembly on Aging arranged by the United Nations from 26 July to 6 August 82 at Vienna females as in the developed countries. Age specific data for the 1981 census are not yet available but those for 1961 and 1971 census indicate the following sex ratios :

All ages	1951	1961	1971	1981
All ages . .	946	941	930	935
60-69 . . .	993	967	921	N.A.
70+ . . .	1043	1064	970	N.A.

The marital status of the population 60+shows a fairly large proportion of the population that has widowed status the incidence of which, as may be expected, is much larger among females than among males. A positive feature of the population 60+in India is that most of them are economically active, presumably because most of them are engaged in sectors in which there is no specified age of retirement. Data below give the percentage of persons 60+classified as workers in the 1971 census (age specific data for 1981 not yet available) :

	Males	Females	Total
Percentage of workers in total population	52.51	11.87	32.93
Percentage of workers in the age group 60+	73.78	10.50	43.16

The proportion of workers 60+to the total working population is higher than the proportion of this age group (1971 census) in the population.

Percentage of population 60+ in total population	5.94	5.99	5.97
Percentage of workers 60+ in total working population . . .	8.35	5.30	7.82

About eight-tenths of the working population is engaged in the agricultural sector. This is evident from the occupational distribution of workers. Most of the employment in agriculture and related sectors does not have a statutory retiring age, and is flexible in regard to hours of work and nature of work depending on physical capacity.

Duty towards the elderly

The Constitution of India recognises the duty of the State towards the elderly. According to Article 41; "The State shall, within the limits of economic capacity and development, make effective provision for securing the right to work, to education, and to public assistance in cases of unemployment, old age, sickness and disablement, and in other cases of undeserved want". This provision is one of the directive principles of State policy, which are considered as fundamental in the governance of the country and "it shall be the duty of the State to apply these principles in making laws" (Article 37). Section 125 of the Code of Criminal Procedure, 1973 requires every person having sufficient means to maintain his father or mother who are unable to maintain themselves. The Hindu Adoptions and Maintenance Act, 1956 lays down that it is the obligation of a person to maintain his or her aged or infirm parent (Section 20(3)).

The Study Group of Income and Wages (1978) recognised the needs of old persons not covered by pensions or other retirement benefits and suggested that there should be some standardisation of the criteria adopted by different states for giving old age pensions (non-contributory) to the destitute old. Recommendations were also made in this Report in regard to government pensioners. The seventh Finance Commission (1978) noted the varying situations in regard to old age pensions (non-contributory public assistance) in different states and observed that it is desirable to have some uniformity in this regard between the states. They allowed in the forecast period provision in each state to enable payment of monthly pension by way of social security pension for 0.1 per cent of the population according to the 1971 census.

The Sixth Five Year Plan (1980—85) of India mentions about the vulnerability of certain categories of the population including the aged and the infirm and the need for development programmes to meet their wants. These welfare programmes form part of the state plans.

Retired Employees

Retired employees of the government and organised sectors of industry are comparatively better off as regards old age benefits. The government service retired employees are eligible for pension, gratuity, leave encashment and provident fund. From time to time, the retirement benefits have been liberalised including payment of pension to family in the event of death of the employee in service, and relief to neutralise price increases. Some of these measures, introduced recently, reflect the government's concern towards the well-being of its retired employees. Two other measures for the benefit of government employees are an insurance scheme which assures payments on retirement or death as per prescribed schedule and the general provident fund deposit linked insurance payment. Central government employees are required to make a compulsory contribution to the general provident fund which is returned with interest on retirement. Income tax rebates are allowed on such contributions. Retired government employees are permitted to take up employment after superannuation, but if any person intends to take employment within two years of retirement he is required to obtain permission of government.

In the organised sectors of industry, retirement benefits are available to the employees. Under the Employees' Provident Funds and Miscellaneous Provisions Act, 1952 three schemes have been framed : (i) Employees' Provident Funds Scheme; (ii) Employees' Pension Scheme and (iii) Employees' Deposit Linked Insurance Scheme. Under the Employees' Provident Funds Scheme which covers employees drawing less than Rs. 1600 per month in establishments employing 20 or more persons, contributions are made to the Provident Fund by the employee with a matching contribution by the employer. After attaining the age of 55 he is entitled to full refund of contributions by him and by the employer to the fund, along with interest. More than 100,000 establishments have adopted this scheme covering 11.31 million employees. The Employees' Family Pension Scheme applies compulsorily to the members of the Provident Fund and provides, the benefit or family pension to the family of a deceased member, life insurance benefit in the event of death of the member, and a lump sum payment not exceeding Rs. 4,000. Under the Employees' Deposit Linked Insurance Scheme, in the event of death of a provident fund member while in service, the person receiving his provident fund is paid, in addition, an assurance benefit.

The Payment of Gratuity Act, 1972 is applicable to factories, mines and plantations etc., and covers employees earning less than Rs. 1,000 per month. The benefit available under the scheme is a lump sum amount equal to 15 days' wages for each year of continuous service subject to a maximum of 20 months' wages on termination of employment, superannuation, retirement, resignation or death.

For workers in coal mines, similar benefits are available under the Coal Mines Provident Fund and Miscellaneous Provisions Act, 1948 under which three schemes have been framed : (i) The Coal Mines Provident Fund Scheme which covers about 1,000 coal mines. He registered membership stood at 1.65 million in December, 1981; (ii) The Coal Mines Family Pension Scheme which covered 0.68 million employees in December, 1981; and (iii) Coal Mines Deposit Linked Insurance Scheme which provides insurance coverage to a member of the Coal Mines Provident Fund.

Provident fund and related benefits are also available under the relevant legislation to workers in plantations, sea-men etc.

Old age pensions of the nature of public assistance have been introduced by state governments in keeping with the goal of welfare state. These are now in operation in most parts of the country. The eligibility criteria vary from state to state. Most of the states have laid down 65 years as the minimum age of eligibility while in a few states the age limit is 60+. Some states prescribe a lower age limit for females, widows or for persons suffering from physical or mental handicap. A period of continuous residence in the state is necessary; the minimum is 3 years in some states, and in some 10 years or more. Old age pensions are given to a person with no source of income or with nominal income which is inadequate for survival, with no one to support him. In some states the period of entitlement for certain categories is for a limited time and in others on a continuous basis with a provision for review of individual cases. This assistance is discontinued when the beneficiary migrates to another state. In 1980-81, about three million people benefited under this scheme in different parts of the country.

Health Care

Health Care of the aged is integrated with the overall system of health services in the country. The main objective of public health care is to provide better primary health and medical care services to rural and tribal areas and urban slums covering preventive, promotive and curative services, education in health and hygiene, prevention and control of communicable diseases, improvement of nutritional status, immunisation and provision of protected water supply. India is committed to achieve health for all by the year 2000 through provision of at least a minimum package of health care services to all segments of the population, giving priority to the underprivileged sections of society.

The elderly people make use of the free medical services provided at the government hospitals and dispensaries and also use privately run medical services for which payments have to be made. For retired workers in the organised sector certain facilities for health care are extended so that they continue to have the benefits on nominal payment even after retirement as, for instance, workers covered by the Employees' State Insurance Scheme. Similarly, in the case of retired central government employees, under the Central Government Health Services Scheme, health care is provided to the retired employees and their family members at a nominal contribution. In some of the large establishments like the Posts and Telegraphs, Railways, Defence Services, etc., out-door medical services, domicillary visits by doctors, laboratory tests and supply of medicines are available to the retired employees. Most of the state governments also provide health facilities to their retired employees and their families.

Common Residence

Common Residence is the general living arrangement for the elderly except where circumstances render this difficult such as the shortage of housing accommodation in the cities and their high rentals, and the unwillingness of the older people to be uprooted from their community to stay with their migrant sons. There are no separate housing schemes for the elderly; they are expected to derive benefits from the general housing schemes which cater to the requirements of different categories of the population. However, in recent years, in public housing schemes by Housing Boards|Urban Development Authorities, some houses have been earmarked for retiring retired employees. Employees in government services, banks, public sector undertakings can get house-building loans at rates of interest lower than bank interest rates. This can be repaid over several years which enables them to have a house by the time they retire.

In all social development programmes voluntary organisations have been accorded a high priority and are supported, promoted and developed not only because of the human and financial resources that they can mobilise but because of the vitality and strength that involvement of the community can give to policies and programmes. Voluntary organisations are associated with working groups, committees or study teams; they are given financial assistance to implement schemes; training programmes for their manpower are arranged.

In the care of the aged, voluntary organisations in India have been playing a pioneering role and have shown considerable adaptability and flexibility in meeting the various social service needs of the elderly.

A directory of non-governmental organisations working in the field of the welfare of the aged in India prepared recently has identified about 380 agencies. They provide a wide range of services—residential care, day care, geriatric care, medical and psychiatric care, recreation, financial assistance, counselling etc. However, the majority of the agencies and the services they provide are urban based.

Voluntary agencies have also been active in conducting studies on the problems and needs of the elderly and in organising discussions|seminars|workshops not only on the needs of the elderly but also the contributions that they can make.

Demographic Trends

The demographic trends make it evident that in India, as in many other countries of the world, the proportion of the old in the population will increase, in addition to the increasing numbers in absolute terms. This trend is likely to be accentuated as a result of improved expectation of life at birth as well as at the later stages of life. Among the positive factors to be noted in the Indian society is the strong value that is still attached to the care of the elderly by the children and the social pressure that continues be exercised on persons who fail discharge this responsibility.

The welfare of the elderly in developing countries like India is to a large extent linked with the general pace of social and economic development of the country and the extent to which the under-privileged sections of society are able to derive benefit from the development plans.

Dispelling Certain Beliefs

It is necessary to dispel the belief that old age is synonymous with illhealth or disability. Thanks to modern science and technology most people are able to lead an active and healthy life upto the age of 70 years or more. Health care of the elderly would best be met through the normal health infrastructure which is being progressively strengthened particularly to reach the under-privileged sections of society. Exclusive public health services for the elderly may be difficult at the present stage of development.

In the area of housing, particularly in cities, shortage of accommodation is likely to affect the care of the elderly through over-crowding, forced separation of parents from their children because of the paucity of accommodation making common residence difficult, and other such factors.

The problem of the aged in rural areas, particularly those who do not own production assets and belong to the under-privileged sections of the society, have a somewhat different dimension since old age brings dependency, absolute or relative, and increases the burden on the earning members. Old people should not be merely considered as beneficiaries. They are also a resource and their experience and spare time should be put to use in community work such as adult literacy; welfare work among women, children and the handicapped; relief work; medical care; legal aid; taxation advice; etc. An important service that needs to be rendered to old people is in the area of counselling and the planning of life after retirement. This would cover legal, professional, housing, health, financial and other aspects.

Research is necessary on the living conditions of the elderly, their problems and needs and evaluation made of policies and programmes for their care. Among some of the other aspects that need careful consideration are ways of increasing the accessibility of the aged to different types of services available to the general population, like facilities in travel in public transport, special counters in centres rendering social services etc.

Voluntary organisations have to play a very significant role particularly in the effective implementation of a strategy which places a great premium on the care of the elderly through the family and the community and on non-institutional services. The organising of training of those engaged in the care of the elderly is an emerging need; the existing training institutions in different fields need review to train these workers.

Aging in India should not be viewed with anxiety nor should the old be considered as an exclusive group needing separate institutional care. The time worn practice ordained by religious, cultural and social heritage in India is to care for them in the most normal and natural setting i.e. the family and the community, and permit them to play their roles and responsibilities as normal members. Policies and programmes both governmental and voluntary should aim at supporting and helping the family and the community in this direction. ☐

Our Contributions

P. Padmanabha—Registrar General & Census Commissioner, India, Dr. Ashish Bose—Professor, Institute of Economic growth, New Delhi; B.L. Raina—First Director, Family Planning, Ministry of Health, Dr. S. Yadava Reddy—District Extension and Media Officer, Hyderabad, Sat Paul Mittal—M.P., Chairman, Indian Association of Parliamentarians on Population Development; S. B. Chavan—Minister of Planning and Dy. Chairman, Planning Commission; A. Mariaraj and M. Sebastian—St. Joseph's College, Trichy; Smt. Sarla Mukhi—Director, Population Education, Family Planning Association of India, Bombay; V. K. R. V. Rao—Eminent Economist; Dr. C. Gopalan—Director, The Nutrition Foundation of India, New Delhi; J. L. Saaz—Chief Editor, Ministry of Health and Family Welfare, Government of India: Vasant P. Pathe—Professor, M. A. C. S., Pune, Smt. Mamata Lakshmanna—Population Education Officer, Government of A.P., Hyderabad: B. N. Murthy—Dy. Principal Information Officer, PIB, Bombay; Sethu Rao S.—Editor; Dr. S. Sreedhara Swamy—Reader, Osmania University, Hyderabad. ☐

Productivity year in retrospect

To make productivity year 1982 a success all out efforts were made in all the sectors. Emphasis had been laid on thermal power generation achieving a load factor of 48.7 per cent which is 2.3 per cent more than the figure for the preceding year. Total power generation from January-November 1982 was 118.3 billion units. During the same period industrial situation also looked up. Similarly production of coal also increased.

Big strides were made in the power sector during 1982, both in generation from the existing units and by way of addition of generating capacity.

Power generation of 118.3 billion units during the year (January-November) was 7 per cent more than the generation in the corresponding period last year. The target for 1982 is 119.5 billion units.

The thermal power load factor of 48.7 per cent is 2.3 per cent more than the figure for the same period last year. Here again, the target of 49 per cent for the whole period is expected to be achieved.

The generating capacity of 2827 MW has been added to the existing capacity during the year. This comprises 2262 MW thermal generation and 565 MW hydel generation. The National Thermal Power Corporation commissioned its first 210 MW unit at Singrauli early this year.

Rural Electrification

During January-November, 1982, 16,293 more villages were electrified bringing the number of electrified villages to 3.01 lakh. With this, nearly 53 per cent of the total number of 5.76 lakh villages in the country now get electricity. The area thus covered serves 71 per cent of the population in the rural areas. Out of the total population in the country, nearly 77 per cent now get electricity.

During the year, 2,22627 pump sets were energised bringing the number of energised pump sets in the country to 47.7 lakh.

All the villages in the country are expected to be electrified by 1995.

Industrial Situation

The year end review of the industrial situation in the country clearly indicates that the liberalised policies and procedures with regard to expeditious clearing of licences, promoting industrial disposals in backward areas and "No-Indudstry Districts" and refurnishing and improving the functioning of the industrial infrastructure and public sector have yielded rich dividends.

Industrial production in 1980-81 increased by 4 per cent as compared to that in 1979-80 which recorded a negative growth of—1.4%. In 1981-82, industrial production increased by 8.6 per cent. In the first six months of 1982-83, the production continued to grow at a rate exceeding 4 per cent over the same period of 1981. It is hoped that this rate of growth will be maintained in the remaining part of the year also. This progress has to be viewed against the trends in economic and industrial growth of the rest of the world, particularly the industrial countries. The over-all growth rate of real GNP of industrial countries was about one per cent in both 1980 and 1981. The aggregate index of industrial output of industrial countries as a group contracted further in the second quarter of 1982, continuing the downward trend that began in late 1981. The decline in the index which was 2.1 per cent in the first quarter of 1982, over the same period in 1981, continues. Preliminary estimates suggest that the aggregate index declined further in July 1982, indicating a decrease of 5.2 per cent during the 12 months ended July 1982.

The number of letters of intent approved during 1982 was an all-time record of 1017. In 1981, the number of such letters was 916; in 1978 it was only 440. The number of such letters of intent issued for locations in backward areas has also recorded an all-time high, with a figure of 573. For the first time in 1982, 158 letters of intent have been issued for locations in 'No industry districts'—districts which do not have either a medium or a large industrial unit.

The composite index of industrial production of infrastructure industries including electricity, coal, saleable steel, petroleum, refinery products, cement and crude petroleum has recorded an increase of 8.1 per cent during April-November, 1982 over April-November, 1981.

Specific steps have been taken in the last year to fill up executive posts in public sector undertakings falling within the jurisdiction of this Ministry, redefined the responsibilities and powers of the management of these undertakings and delegated much more authorities to them in terms of project management and necessary sanctions. As a result, 12 production units under the administrative control of Department of Industrial Development, which had registered an increase of 35.51 per cent production during 1981-82, have been able to maintain this level of progress during the seven months of the current year 1982-83. During these seven months these units produced goods worth Rs. 21.44 crores which was 33.45 per cent higher than the production achieved during the corresponding period of last year. Similarly, 17 production units under the Department of Heavy Industry had achieved during 1981-82 a growth of 23 per cent in their production over the previous year 1980-81. During the period April-October, 1982, the cumulative production of these units amounted to Rs. 937.21 crores, which was 25 per cent higher than the production in the corresponding period of last year.

Increase in Coal Production

Coal production and despatches during the year 1982 (April-November) showed an increasing trend compared to the figures for the same period last year. Coal production was 3.53 million tonnes more than the production in the corresponding period last year, showing an increase of 4.7 per cent. The units under Coal India Ltd. registered an increase in production of nearly 2.1 million tonnes. The other companies like Singareni Collieries Company Ltd. and Tata Iron and Steel Company Ltd. also showed an increasing trend in production.

Despatches of coal during the period April-November, 1982 was 78.73 million tonnes showing an increase of 4.7 per cent over the despatches during the same period last year.

The closing stocks in collieries as on November 30, 1982 was 18.56 million tonnes compared to 15.94 million tonnes of last year, showing an increase of 16.5 per cent.

By November-end this year, there were 97 coal mining projects, five washeries and four other non-mining projects, each costing Rs. 5 crores and above in various stages of implementation in CIL and SCCL. There are also some other schemes costing up to Rs. 5 crores being implemented by CIL.

During 1982, 14 coal mining projects, central workshops, one major railway line diversification and two integrated water supply schemes have been approved by the Government. The total investment on these schemes is Rs. 910 crores. At full production, the capacity of these projects will be 18.80 million tonnes per year.

There are also 51 other projects under consideration of Government and in different stages of appraisal.

The number of new washeries have been taken up by CIL to meet the coking coal requirements of existing and proposed steel plants. The washeries now under construction are: Moonidih in Jharia coalfields with 1.05 million tonnes clean coal capacity, Rajrappa and Kedla in West Bokaro coalfields with 1.8 million and 1.2 million tonnes clean coal capacity respectively. Nandan in Pench Kanhan coalfields with 0.72 million tonnes clean coal capacity and Mohuda in Jharia coalfieds with 0.4 million tonnes capacity.

The major erection work at Moonidih is complete. The Barora washery project of BCCL was commissioned in August this year. The medium coking washeries viz. Rajrappa, Kedla, Nandan and Mohuda are expected to be commissioned between 1983 and 1985.

There are 8 washery coal preparing plants at various stages of appraisal by the Government.

Indian experts were deputed during this year to Egypt for preliminary survey of coal resources of that country.

For tackling special problems of coal mining for which indigenous equipment is not available, technical collaboration has been entered into with USSR, U.K., France, Poland and Germany. The Indo-Polish Joint Commission meeting was held in Warsaw in October this year to enlarge the scope of cooperation between the two countries.

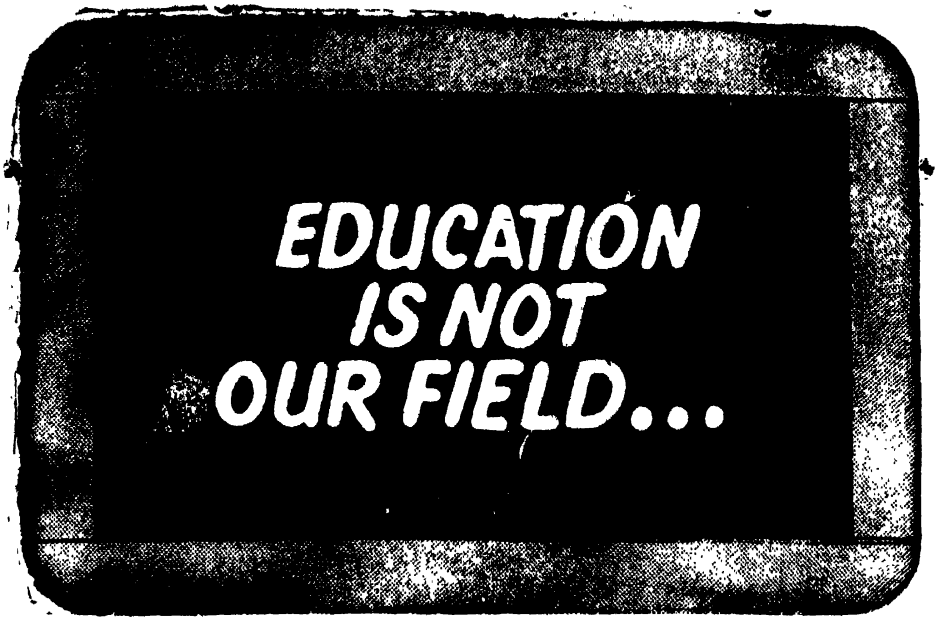
Government accords the highest importance to the enforcement on safety measures in coal mines. The recommendations of a Committee on Safety in coal mines are being implemented by the Government. For reviewing the progress on enforcement of safety measures at highest level in Government, a Standing Committee on Safety in coal mines has been set up this year. The Minister for Energy is the Chairman of the Committee and Secretary (Coal), Secretary (Labour), CMDs of Coal Companies and Director General, Mines Safety, are the members. The Joint Secretary, incharge of Safety in the Department of Coal, is the Member-Secretary. □

(*Continued from page* 32)

that have to be undertaken for this purpose, I will briefly refer to two of my earlier suggestions : (1) I plead for the phased abolition of the category of multi-purpose workers and suggest their replacement by B.Sc's in Health Science; (2) the rural health programme at the village level may comprise of 3 elements with inbuilt functional links—(a) the regular health programme operated by the Health Agency through its established infrastructure, (b) a programme of health|nutrition insurance cover operated as an integral part of Rural Development|Employment programme, (c) a preventive and promotive health-care and health-education programme operated through the infrastructure of rural schools addressed not merely to school children but to their sibblings and parents, "the school community". □

(*Continued from page* 53)

fulfilling the objectives of the Prime Minister's 20 point programme which envisages efficient and profitable working of the public sector. The lion's share of condom production in the country is today taken care of by Hindustan Latex Limited. With the continued cooperation and assistance from all quarters, the company will be contributing its best for the success of the National Family Planning Programme, the key programme in the socio-economic development of our country. □



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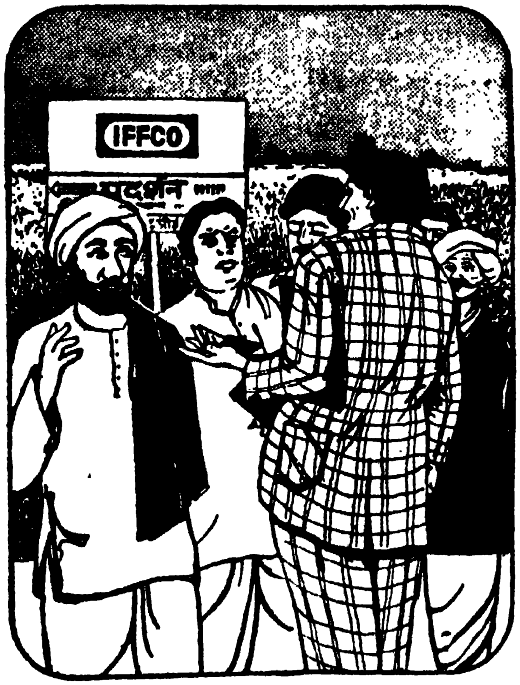

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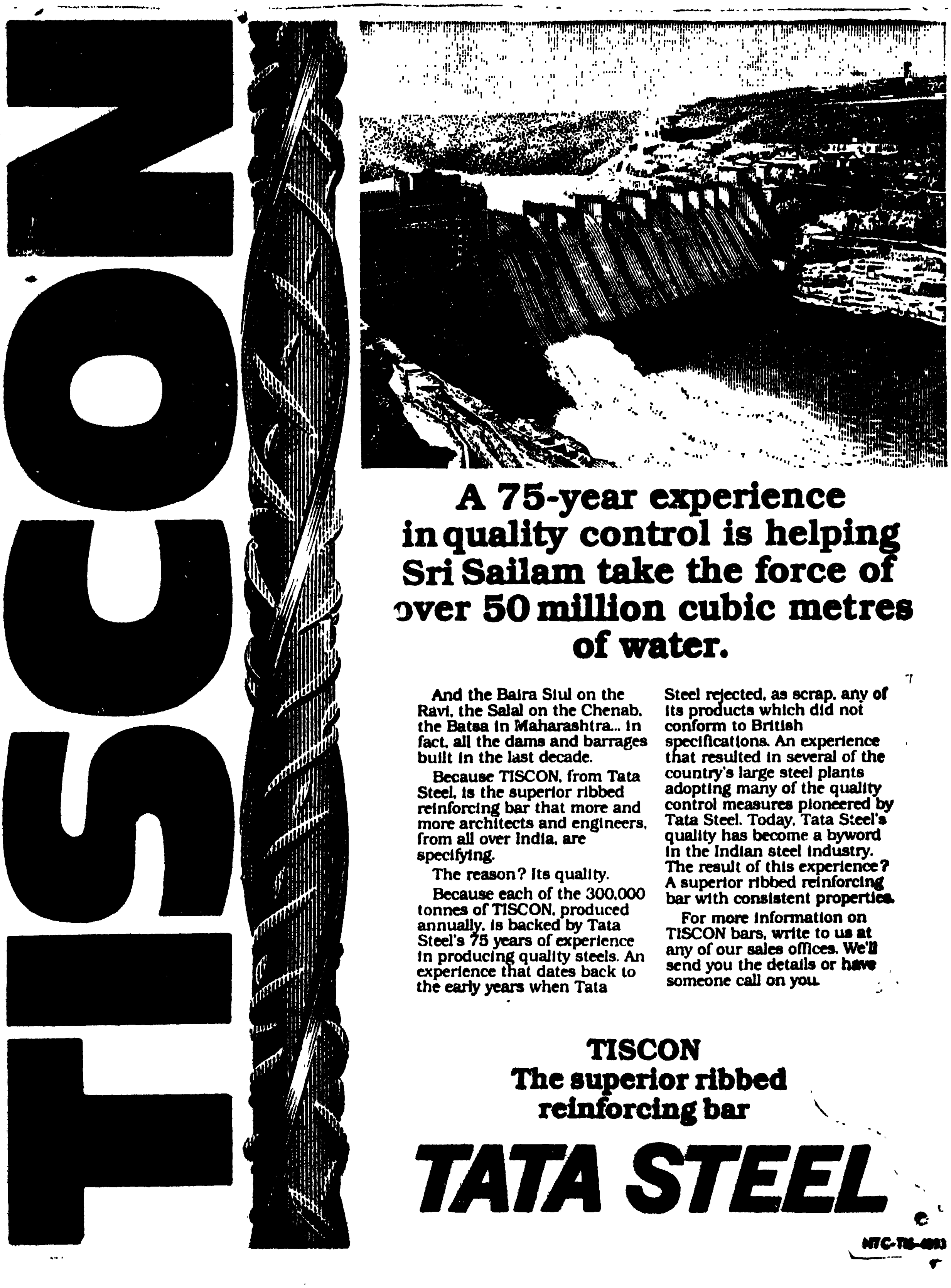

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Books

Economic Growth

An Evolutionary View of Economic Growth; by Ashok S. Guha; Clarendon Press, Oxford, 1981; Price Rs. 60; PP. 139.

THE BOOK, besides its being a major contribution to the study of Economic Growth and breaking fresh ground, is so well written that it is likely to go down as a classic on the subject. It is lucid in style evincing the writer's command of the English language; it is pretty-well argumentative. His readings span a number of disciplines such as Sociology, Anthropology, Geography, History, Political Science, Ecology etc.; each discipline seems to have contributed to the writer's economical studies. Any meaningful analysis of the development process requires an exploration of the delicate tracery of relationship between the economic, political and social variables in society. Economic growth, therefore, is an extension of organic evolution of structures evolved and influnced by political, economical, socio-psychological, anthrópological environments and forces. The legacy of the past and institutional heritage play an important part in shaping rates and patterns of growth. Economic changes, therefore, cannot but be regarded as inter-twined in a wide complex formed over the centuries. The views presented with clarity and precision belong to a spectrum of a good many disciplines already referred to. It was Marx who for the first time focused on social processes in determining the role of the class relations and their interaction with technology. A second approach to social changes was visualized by Hicks who analysed the political correlates of the rise of the market. The writer follows the Marxian method, rejecting the Marxian postulates of the primary of economic motivation; he concentrates on the essential biological laws. Economic studies, Guha argues, cannot ignore social ideologies, religious beliefs, personal convictions, and other such factors. Divided into as many as 12 chapters, the book provides a depth study in the adaptation of human society to the environments, the politics of adaptation, national economic development, international dimensions, development contrasts, nature and future of international economic inequalities etc. The appendix entitled 'The Meaning and Measurement of Economic Growth' is not only relevantly logical it bears the stamp of the writer's genius. Nicely produced, the book is quite moderately priced. The book embodies commendable efforts and original thinking; it would invite wide readership.

Dr. T. C. Rastogi

Resources Planning

The Indian Economy (Resources Planning and Development Problems) by Ishwar Chandra Dhingra, Department of Economics, Bhagat Singh College, Delhi University; Pages 1370; Price: Rs. 45.

ANY ATTEMPT to project the multi-dimensional contours of the Indian economy, requires a thorough study widely illustrated with statistics, both of the past and present, thereby clarifying the progress achieved in the last three decades together with the obstacles being farm cultivation, industries etc. together with the monetary aspects of Public Departments, Banking regulations, Centre-State relations etc. What should be of particular interest is the chapter on Social Welfare, the various benefit schemes like ESI Act. Maternity and the Workmen compensation Act 1923. The agricultural situation has been widely covered with special reference to farm mechanisation, irrigation, capital formation (loans etc.) and the inevitable pricing of commodities. The chapter on transport has been a little too precise and a little elaboration could have done justice to that vital sector. On the whole, the book offers the reader a near total perspective into the economic outlook and at the subsidised price, it is a bargain.

P. N. Chatterjee

External Resources

Foreign Resources and Development in India, By Kalipada Deb, Heritage Publishers, New Delhi, pp. xii + 276 (1982); Price : Rs. 90.

DR. KALIPADA DEB of Gauhati University, has taken much pains in collecting the statistics of different aspects of external resources required for economic development in India. As a matter of fact, the subject is extremely important for almost every developing country and any worthwhile study on this subject should be greatly welcome. The task of capital formation whether based on domestic savings or mobilised from external sources is be set with problems of diverse kinds in which politics does not play a minor role. During the early phase of industrial revolution, the availability of capital was not discussed in non-economic terms but during recent years, particularly after the Second World War, the emergence of super powers taking partisan view in development of emerging nations has complicated the problem. Unfortunately, many writers on the subject failed to take an objective view and are apt to see political pressurization in almost every act of capital supply; if it is from the domestic sources, it is considered the outcome of exploitation of the poor by the rich and if it is from external sources, it is considered as a means for pressurising economic decisions by the super powers : Dr. Kalipada Deb can be categorized in this category of writers who see almost every economic decision from such prejudiced stand-point.

Dr. Deb seeems to project the thesis that all developmental efforts in India have been the outcome of international exploitative process of super powers which has been implemented domestically be western educated bureaucrats alien to Indian tradition for which inspiration has been received from corrupt politicians. One often wonders whether such a generalised approach to such an important problem is justified.

The book divided into 11 chapters attempts to analyse the impact of foreign capital on Indian developmental efforts. For this purpose, special chapters have been devoted to deal with the flow of foreign resources, exports, foreign aid, foreign profit investment; the author has also tried to discuss the contribution of foreign capital to the development of agriculture and industries as well as to building of infrastructure and human development. The author agrees to the fact that Indian exports during the last few decades have been increasing in an important way. But by attributing various estimated cost of receiving assistance and on export promotion measures, he has come to a conclusion that much of the gain has been illusory. He considers that as much as the export increases has a reason due to import needs of export production, foreign expertise and know-how "much of the publicised break-through in exports is hollow". About foreign aid, he further states that the ostensible purpose of foreign aid is to quicken development but in actual practice it does exactly the opposite. Foreign collaborators and bureaucrats have been charged by Dr. Kalipada Oeb with the responsibility of sabotaging the self-reliance, the goal of the country.

Whether Dr. Kalipada Deb has based his conclusions and observations on various statistics and case studies included in the publication is debatable and generally one feels lack of academic objectivity in the publication.

—Bepin Behari

Socio-Cultural Profile of India

Religions and Communities of India; Edited by P. N. Chopra; Vision Books (Incorporating Oriental Paperbacks); Connaught Place; New Delhi; pp. 316; Price Rs. 150.

THE SOCIAL-CUM-CULTURAL profile of India, virtually composite in nature, is made up of trends and traits akin to quite a number of religious, faiths, communities, sects and castes which have become unalienable from her ages old heritage. Even so, it has rarely been as such the subject of comprehensive scholarship, historical writing or social study.

Research also has concentrated itself on one religion or one community at a time, apparently to meet the ends of a limited intent and purpose.

Dr. Chopra, an eminent historian and a high-brow journalist of proven sensibilities, has to his credit quite a number of books on history, religion and political movements. True to his past record and consistent with his expertise, he has gone the whole hog about mustering authentic material from established sources of genuine research and consequential knowledge and information to bring out this monumental volume which is tentamount to a dependable reference manual of immense utility.

The lay-out of this compilation is significantly systematic. The major religions of India in their respective chronology have been depicted as large family-trees beginning with their roots, stemmoring and branching off all round to signify the various communities, sects and castes affiliated to the basic religion or community, as the case may be. The vitality of descriptive veracity of contents of their compilation extends not only to the origin of each religion, genesis of their off-shoots, their linkage with each community, but also to their heritage of thought, philsosphy, ethical values, codes of conduct, customs and rituals as reflected in their functions, festivals, ceremonys and other expositions of art and culture.

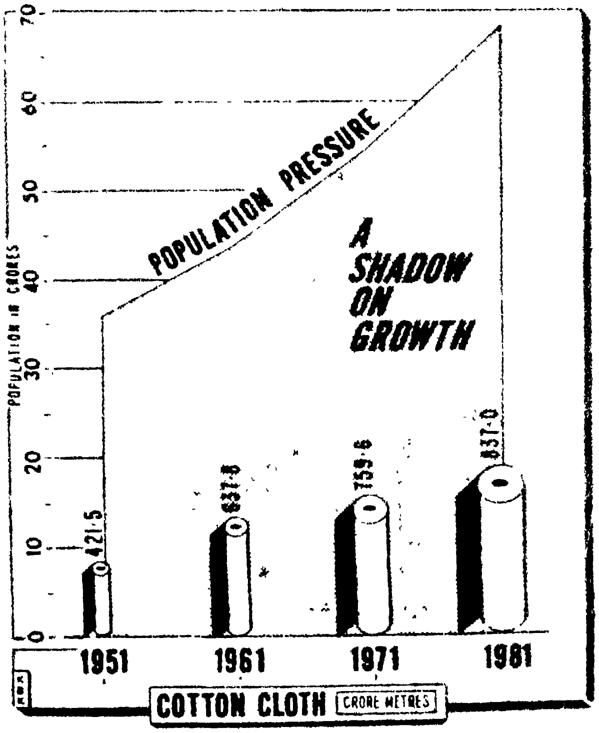
Reflectively and quite synoptically the contents of the volume are quite clear on the glimpses of history giving place to many a pride and prejudices and their subsequent assimilation with the mainstream of secular forces emanating from our struggle for independence and stabilising in our democratic set-up of post-independence era.

Even though the various write-ups for the volume have been derived from works of different authors, the homogenuity of the narrative has been skilfully adhered to and affords an impression of a unified style. Evidently the readability of the book is its mainstay and is destined to draw large readership. Quality of production is exquisite enough to justify its price. The editor as well as publishers have done the job creditably.

R. Prakash

Now come to the cotton cloth we produce. In 1951 we manufactured 4215 million metres of cotton cloth to cover our 36,10,88,00 people. Alongwith the length of cloth, the number of people to be covered has been increasing with the result the amount of cloth on each person is dwindling. In 1971 about 7596 million metres of cloth was produced. But it had to be shared by more than 540 million people. The population pressure has been continuing to cast its shadow till now, for in 1981 about 8400 million metres of cloth produced had to be shared by more than 685 million people. A sharp contrast, indeed!

A sharp contrast isn't it ?



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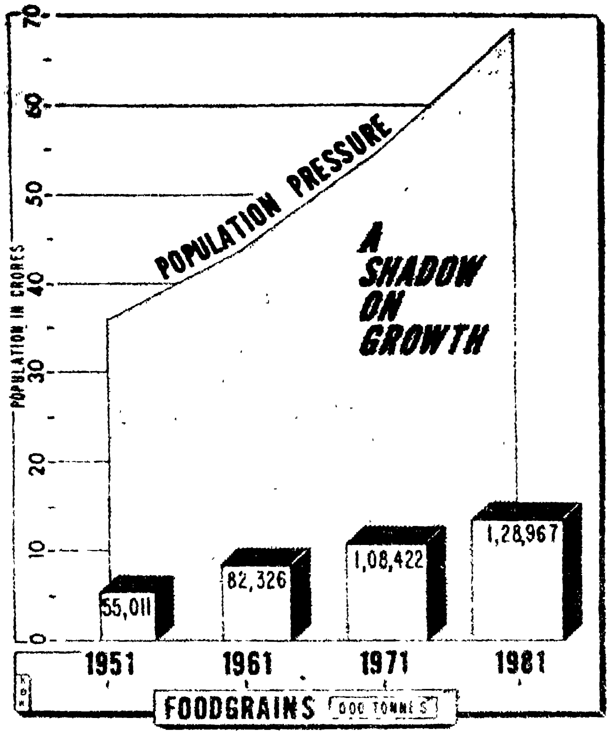

A sharp contrast isn't it?

Just look at the quantity of foodgrains produced in 1951—about 55 million tonnes. This was shared by about 360 million people. Over the years, spectacular strides have been made in the output of foodgrains and in 1981, about 130 million tonnes were produced. Side by side we have been multiplying our numbers and in the race the population growth outstripped the food production rate. Now we are about 685 million. A sharp contrast indeed!

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YOJANA

THE SYMPOSIUM

Why not tax income from agriculture !

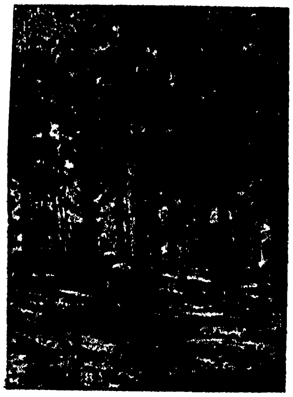
Opt for options, says Dr. Lakdawala

The scope does exist, argues Dr. Kahlon

March 16-31, issue

5. Surjit Singh Barnala

6. Piloo Mody,
his last encounter



12

Tree plantation

Target : 196.14 crores of trees
(for 1982-83)

Achievement : 194.77 crores
(April-December, 1982)

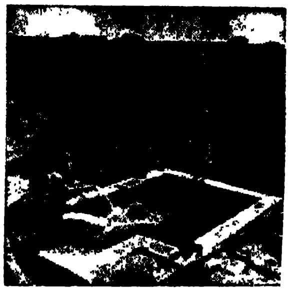
The 20-point action plan

Irrigation pumpsets energised

Target : 3.78 lakh pumpsets
(for 1982-83)

Achievement : 1.97 lakhs
(During April-December, 1982)

1



YOJANA

Volume 27 Number 3

February 16—28, 1983/27 Magha—9 Phalguna, 1904

The symposium

Why not tax income from agriculture !

D. T. LAKDAWALA 4 Indirect taxes would meet the purpose

A. S. KAHLON 6 The scope for taxation does exist

also

MALCOLM S ADISESHIAH 14 The 'triple' action alone could remove poverty

P. RAMAIAH, N. LINGA MURTHY & G. SUDARSHAN 20 Andhra farmers' service societies, promise and performance

SACHINDRA NARAYAN 22 Are the migrant tribals of Bihar being exploited ?

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Indirect taxes would meet the purpose

"Economists, all of them," says Dr. Lakdawala, "agree that agricultural income should be taxed", but some now do differ, he adds, on its mode. He gives a close look at the options available as such and asserts "once the need for and the possibility of taxing the agricultural sector differently from the non-agricultural sector are recognised, the only relevant rules for guidance could be the need for a fair degree of progression on agricultural incomes inter se, and the desirability of a big sector like the agricultural one contributing a proper proportion of tax revenue compared to non-agricultural sectors".

DR. D. T. LAKDAWALA, FORMER DY. CHAIRMAN, PLANNING COMMISSION,
GOVERNMENT OF INDIA

AS FAR AS ECONOMISTS ARE CONCERNED the question does not arise because all of them agree that agricultural incomes should be taxed. In fact they are being taxed directly through land revenue, agricultural income tax (in some states), stamp and registration duties, estate duties etc. and indirectly on expenditure made from them through commodity and service taxation. The only question is whether they are not more lightly taxed than non-agricultural incomes, and if so, the remedies thereof. Is it advisable to extend the general income tax to agriculture also ? What modification will the adoption of such a course need in the land revenue system, and what will be its effect on resource mobilisation ? If this course is not advocated, can we think of other changes to make the tax incidence on agricultural incomes more in line with modern concepts ? Various opinions have been expressed on these questions. It may be worthwhile to analyse the main differences that prevail on this subject and the basic considerations that a feasible solution must keep in mind.

Some years ago, the most prevalent professional opinion was that agriculture incomes should be subjected to income tax on the same principles and at the same rates as non-agricultural incomes. This would satisfy the test of equity between the agricultural and non-agricultural incomes, ensure progression of taxation among agricultural incomes and would also prevent the transformation of higher taxed non-agricultural incomes into lower taxed agricultural incomes. As more and more thought came to be devoted to the subject this near unanimity has been undermined for many reasons.

How general income-tax is inapplicable

In the first place, according to the distribution of tax powers laid down in the Indian Constitution, tax or agricultural income is a State subject and whatever the case with which other constitutional amendments have been made, amendments in this arrangement seem to be un-acceptable to the States.

Secondly, if agricultural incomes are taxed in the same way as non-agricultural incomes, it becomes difficult to continue the levy of land revenue and agricultural income tax. While the latter can easily be sacrificed as it yields about Rs. 60 crores, he former means a substantial loss of Rs. 200 crores a year. From the revenue point of view the extension of the general income tax to the agricultural sector is only worthwhile if it yields more of additional revenue.

Thirdly, it has already been decided to treat agricultural land as different from other forms of property. We have a ceiling on agricultural land to which there is no counterpart on the non-agricultural side. The ceiling legislation is not effectively implemented but combined with the increased effective exemption level of non-agricultural income, and the lower level and more even distribution of agricultural income, it will mean that a tax on agricultural income imposed in the same way as non-agricultural income will yield meagre revenue.

Fourthly, the direct taxes based on the individual assessment principle have been found to be difficult to operate in the agricultural sector. Only in June 1980, the Finance Minister announced the abolition of the wealth tax on agricultural land except for very limited categories like tea, coffee, rubber, etc. on the ground that the tax yielded little and was extremely difficult to implement.

Finally, inquiries made into the incidence of indirect taxation have shown that even though the formal tax structure is the same, the burden of indirect taxation is less in rural areas than on corresponding expenditure groups in urban areas. This is partly due to the greater prevalance of rural expenditure in kind, but even when made in money the rural expenditure is more on commodities and services not taxed or liable to less heavy taxation. The passage of time has so far not affected this disparity. It is therefore being increasingly felt that the direct tax on agricultural income will have to be different from the general income tax and will have to be based on presumptions rather than actual individual assessment.

Why not modify land revenue !

Land revenue to which agricultural land has been long subject is best conceived as a tax based on presumed income from agricultural land. Can it be modified to serve the main basis of a direct tax on agriculture income ?

The major complaint against land revenue is that it is based on presumptions regarding agricultural income as they prevailed long back. Various restrictions were placed on land revenue enhancement at the time of revision, and no resettlements have been generally made during the last 50 years. Since these settlements were made in various settlement areas, agricultural production and profitability have changed differently and prices have risen tremendously. The result is that land revenue which was at one time expected to be 14th to 15th of gross income from agriculture is now much less than 1 per cent. It can therefore be certainly greatly enhanced. Owing to the long time lapse, the inter-alia revenue inquiries have cropped up on a large scale. Land revenue at best is a proportional tax, and in practice it often tends to be regressive. Many efforts have been made in the last few years to modify land revenue system through flat increase, through surcharges on commercial crops and through progressive increases according to land revenue fixed, but where the base itself is weak, the super structure built on it cannot be found to be equitable and enduring. The question therefore is whether the land settlement system cannot be revised as to make it more upto date, more progressive, and more income and prices elastic. Various suggestions* have been made in this connection the differences among them being in the type of presumptions made, the periodicity of revision and the degrees of approximation to actual conditions on individual fields. There are a few guiding principles that must be kept in mind while judging them.

The guiding principles

Firstly, looking to our records of the crops grown on the individual fields it is difficult to introduce the principle of determining ratable value of land according to the proportion of land devoted to each crop from year to year. It is better to be less ambitious and think of a basis depending on the actual crops grown on land in different districts of settlement areas.

Secondly, if one has to deal with thousands of farmers, it is better to change the tax basis on different holdings periodically, say one in every five years rather than every year so as to confine the administration difficulties and harassment to tax payers to the minimum.

Thirdly, the tax based on potential income cannot be as progressive as tax based on assessment because given the same natural properties of land and external facilities the actual incomes are likely to vary widely with different individuals, and the rate has to be so fixed that all persons in the group have the ability to pay it.

Finally, once the need for and the possibility of taxing the agricultural sector differently from the non-agricultural sector are recognised, the only relevant rules for guidance could be the need for a fair degree of progression on agricultural incomes inter se, and the desirability of a big sector like the agricultural one contributing a proper proportion of tax revenue compared to non-agricultural sectors.

This proposal (and its variants) will be open to the objection that it does not amount to an integrated income tax and that there would only be partial income taxes. If average personal agriculural incomes are lower and their distribution is more even than the non-agricultural sector and the overlap between the two is weak, this is not a very valid objection. We have an experience of taxing the non-agricultural income tax at the rates applicable to the total of both agricultural and non-agricultural incomes combined since 1973, and the experience does not show much overlap. If later on the data show an overlap the objection can be partially met by a tax on agricultural incomes being levied at a rate appropriate to both agricultural and non-agricultural incomes.

Taxes are the counterparts of subsidies and expenditures and we knew much less of the distribution of subsidies especially non-budgetary subsidies and expenditure between the agricultural and non-agricultural sectors. As far as the budgetary subsidies are concerned they distinctly favour agriculture and so probably the non-budgetary subsidies. There is reason to believe that rural areas are somewhat discriminated against in the distribution of expenditure. This can however be corrected if found to be powerful through allocation of their revenues derived from the new tax on agricultural incomes to rural local bodies.

Indirect taxes on agriculture based on the principles mentioned above would be found equitable among agricultural groups and much more equitable between the rural and urban groups than the present arrangement. In view of the very real differences in the agricultural and non-agricultural sectors it may be difficult to go further

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*See, for instance, Ministry of Finance : Report of the Committee on Taxation of Agricultural Wealth and Income (1972) Govt. of U.P. Taxation Enquiry Committee Report (1974) and Lakdawala : Direct Taxation on Agriculture in *Indian Journal of Agricultural Economics, October—December*, 1975.

The scope for taxation does exist

> *"Lack of effective progressive taxation holds back a development effort which potentially could achieve a wider distribution of benefits. This is supported by the fact that direct ta receipts from land revenue and agricultural income tax contributed only one per cent of the net domestic product from agriculture. Apart from equity considerations, direct taxation of the more affluent segments of the agricultural sector would exert stabilising influence on incomes and prices. There is scope for additional mobilization of resources and that agricultural sector could make greater contribution to total tax revenue in the context of resource scarcity situation of the Indian economy".*

A. S. KAHLON, FORMER CHAIRMAN, AGRICULTURAL PRICES COMMISSION, GOVERNMENT OF INDIA

SHARE OF AGRICULTURAL INVESTMENT in the total investment in the Indian economy at 1970-71 prices increased from 17.4% in 1960-61 to 19% in 1970-71 and around 28% in 1980-81. The Sixth Plan objectives call for considerable acceleration of agricultural growth. A breakdown of the Sixth Plan agriculture expenditure shows that the States finance about 78% of the agricultural outlays but as much as Rs. 5570 M* flow to the states in the form of some 33 centrally sponsored schemes. Again, plan outlays are only part of the public investments in agriculture. The cost of existing staff as well as food and fertilizer subsidies are shown as "non plan" and amounted to Rs. 1160 M, Rs. 6,500 M and Rs. 4,600 M respectively in 1980-81 (revised estimates). Even power is subsidised to agriculture sector and water rates are subsidised when losses on minor irrigations are estimated around Rs. 3,000 M and receipts are not sufficient to cover even working expenses, let alone investments. Considering these factors it could be well argued that as economy develops, all sections who benefit from such developments and whose incomes increase, should make proportionate additional contribution to the revenues of the state.

It can also be argued that lack of effective progressive taxation holds back a development effort which potentially could achieve a wider distribution of benefits. This is supported by the fact that direct tax receipts from land revenue and agricultural income tax contributed only about one per cent of the net domestic product from agriculture. It is also recognised that apart from equity considerations, direct taxation of the more affluent segments of the agriculture sector would exert stabilising influence on incomes and prices. All these arguments would add up to suggest that there is scope for additional mobilisation of resources and that agriculture sector could make greater contribution to total tax revenue in the context of resource scarcity situation of the Indian economy. Mobilisation of resources by reducing tax evasion and making tax administration more effective cannot be over-emphasised but with the prolific literature that exists on this subject, we are not addressing this problem in this section.

This paper is organised in two sections. Section I shows that there is further scope for increasing revenue through direct taxes in the agriculture sector but increasing limitations are encountered in raising resources through direct taxation. Land revenue has become income inelastic. Even agricultural income tax has turned out to be much less income elastic than a progressive direct tax of this nature should be. Section II underlines the need for developing greater appreciation of public appreciation of public administration approach to (a) improving tax revenue by deepening and widening the base of indirect taxes and (b) instead of relying heavily on budgetary approach, use financial institutions to mop up the saving surplus thrown up by the agricultural sector. Clearly the financial outflow to government cannot be interpreted as having played the same role as private savings transfer. This aspect (section b) has been dealt with in a separate chapter. Hence the discussion here is confined to section I and part A of section II.

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*M denotes million

*The views expressed in this paper are personal views of the author.

Direct taxes

Land revenue in the past formed the most important direct tax from agriculture sector and accounted for 22% and 21% of the total revenue from the states taxes or 61% and 59% of the total direct revenue during 1950-51 and 1960-61 respectively. Today, the share of land revenue which was once the mainstay of tax revenues of the states has shrunk to about 5% of the total of the revenues from the state taxes. The steep decline in the relative importance of land revenue is due in no small measure to the anxiety of the state governments to keep the direct tax burden on the agriculture sector at a relatively low level. According to UP Taxation Inquiry Committee Report (June, 1980) the proportion of land revenue in the state tax receipts declined from 40% of total tax revenue in 1960-61 to 6.3 per cent in 1979-80. Table I shows that in the 22 states of the Union, land revenue increased to only Rs. 1,441 M in 1980-81 from Rs. 1,126 M in 1970-71. Table 2 gives the fluctuations in land revenue from year to year (1970-71/1981-82). Only in the case of Andhra Pradesh land revenue reached Rs. 29.21 per hectare, which was the highest, with Kerala occupying a second rank with a level of Rs. 15 per hectare for 1979-80. In five states it was less than Rs. 5 per hectare, and in other states it ranged between Rs. 8 to Rs. 15 per hectare.

Inspite of the low income elasticity of land revenue system, we cannot lose sight of the fact that it has the merit of simplicity, easy acceptability and above all administrative feasibility. It may take some more time before farm incomes in many states rise to a level at which agricultural income tax becomes really productive. In the meantime a graduated surcharge levied on the basis of the size of holding could be used to introduce an element of progression into the system of land revenue.

To replace the existing system of land revenue which permits at the most only a mild progression through a system of surcharges, Raj Committee (1972) recommended Agricultural Holdings Tax, which permitted greater degree of progression in rates based on annual ratable value of land. This recommendation did not, however, find favour on administrative grounds. It was fact that the revision of the schedule of ratable values annually, the annual assessment of each holding and aggragation of different pieces of land into operational holdings etc. would present insurmountable difficulties.

Considering these practical difficulties in the A.H.T., Bagchi has proposed a modified scheme of AHT which suggests that assessment should be made every fifth year instead of annually. And recognising that cost of production data would be available with considerable time lags, the ratable value of land is proposed to be determined on the basis of gross value of output of major crops. The norms could be fixed on the basis of average output for 5 years, while prices may be taken as an average of 3/4 years. Using these criteria, Bagchi estimates that his scheme of land revenue would yield nearly Rs. 400 M in UP and that the incidence would vary from Rs. 8 per acre to Rs. 16.68 per acre on holdings of different sizes upto 20 acres. This scheme merits some consideration and if implemented, would make land revenue more income elastic.

Agriculture Income Tax

Agricultural incomes are not directly taxed in most of the states. Certain states such as Assam, Kerala, Karnataka, West Bengal and Tamil Nadu have levied agricultural income tax but mostly on such plantations as tea, coffee, rubber and cashewnut. The total collection from agricultural income tax amounted to Rs. 94 M in 1961-62 and rose only marginally to Rs. 105 M in 1970-71. With all out efforts made, tax peaked to Rs. 803 M in one of the best agricultural year of 1978-79, but it dropped thereafter to Rs. 579 M in 1979-80 and has not shown the degree of elasticity that such taxes should have (Table 2). Bihar and Orissa which at one time collected small amounts from this tax have discontinued it since March 1979. UP Taxation Inquiry Committee has also observed that Uttar Pradesh realised only Rs. 42M as agricultural income tax in 1977-78, so it has outlived its utility in its present form. A specific recommendation of Raj Committee that the agricultural income of a person should be taken into account for the purpose of determining the rates of income tax was accepted by the government but no separate data on the amount of income tax thus collected are available.

It may be argued that agricultural income tax can be made much more productive by the states imposing agricultural income tax which has much lower exemption limits than the general income tax. If past experience is any guide, such discriminating agricultural income tax structure should be even more difficult to implement, particularly, when so many states do not have any agricultural income tax.

Again, it is perhaps true that agriculture sector of the 'Monsoon Regions' is characterised by such risks and uncertainties which cause fluctuations in farm income and hamper the buoyancy of direct tax in this sector. There are also formidable problems of administering agricultural income tax to millions of farmers scattered all over the country. Also, most of the functionally illiterate farmers find it difficult to maintain comprehensive accounts of their farm incomes and expense. Those are no doubt difficult problems which can perhaps be resolved by making agricultural economy of rainfed farming areas more stable and resiliant than it is today. May be farm incomes are too low in some states to yield any significant revenue from agricultural income tax. At the same time there will be some states which can provide a load in this direction. As agriculture sector of state becomes progressive and profitable. lack of affective progressive taxation should not be allowed to hold back development effort which stimulates further growth of the economy and also promotes better distribution of farm incomes.

Stamps and Registration Fees

Table 2 shows that on the side of direct taxes, stamps and registration fees have contributed a greater degree of elasticity and progression than land revenue. Whereas land revenue contributed Rs. 1,704 M in

1981-82 as compared to Rs. 1,126 M in 1970-71, stamps and Registration fees rose to Rs. 892 M in 1981-82 over R. 244 M in 1970-71. Lakdawala Committee (1974) observed "since the advantage of registration are overwhelming, much of the evasion consists in undervaluation of property. In regard to agricultural land, a minimum value as a specified multiple of the annual land revenue payable could be fixed". Also, if the registering authority feels that actual market value was much higher than the recorded price they should have the power of referring the case to the collector for determination of actual market value. Thus, instead of making frequent upward revisions of rates, effort should be concentrated on devising methods of getting reasonably adequate valuation of properties for the assessment of stamp duty. This will provide automatic increase in revenue from the stamp duty corresponding to the growth of economic activity and increase in the capital value of real estate".

Adding up the total contribution, the total direct tax revenue from agriculture reached Rs. 1475 M during 1970-71, which peacked to Rs. 3,353 M for 1978-79 but fell to Rs. 2,839 M and Rs. 2781M in 1979-80 and 1980-81 respectively. No doubt direct taxes in agriculture contributed only about 12% of the total direct taxes but the direct taxes in the Indian economy themselves contributed only about 20% of total taxes revenue.

Indirect Taxes

The share of indirect taxes in the tax revenues of the Indian economy has assumed critical importance, it rose from 63.2% in 1950-51 to 70.2% in 1960-61, to 78.8% in 1970-71 and around 80% in 1980-81. The rural sector share of indirect taxes comes to about 46 per cent and is likely to grow faster in the context of public administraion policy approach geared to mobilising resources from agriculture sector more through indirect taxes and surplus savings than through direct taxes and levies. This approach suggests that public investments for the development of agriculture, irrigation and power etc. should improve income levels which would lead to farmers buying more and more on non-farm commodities subject to sales tax, excise duties and other commodity taxes in the agriculture sector. The main argument against the indirect taxes is their regressive and inequitable character. This argument, however, becomes weak when we find that the poor people would not normally buy these commodities on which indirect taxes are high.

Gujarat Taxation Enquiry Commission (1980) observed that "through rate differentiation between goods and services consumed by richer and poor sections of the society, the indirect tax structure in Gujarat has been made progressive with income as well as expenditure".

Sales tax and excise duties now constitute the corner store of the states revenue system. Gujarat states sale tax revenue, for example, doubled between 1973-74 and 1977-78 of which the tax on agricultural produce averaged 13 per cent.

The excise duties on agricultural items netted Rs. 10,885 M which formed 20% of the total excise duties in 1978-79. Consistent with the objective of sound welfare, it will be an ideal thing to gather revenue from excise duties on country spirit of which a large share comes from the agriculture sector. Punjab has the highest effective rate on country spirit at Rs. 25.50 per 1 p. liter. Tax on motor spirit, i.e. sale of petrol and diesel can be made more price elastic by its conversion into an ad velorem levy. Discretionary cess on cash crops is levied by several states, but it is unrealistic to make a distinction between food grains and cash crops. A development cess could be levied on all the important agricultural commodities to improve the tax buoyancy of agricultural income growth. Recently (Sc. 18) the Punjab Govt. has imposed a cess of one per cent on agricultural produce to yield an additional revenue of Rs. 200 M per year.

Again, export duties on agricultural items contributed Rs. 1,172 M in 1978-79 which formed 83 per cent of all the export duties. Even the custom duties on imports of agricultural commodities yielded Rs. 1,284 M which formed 6% of total import duties. Perhaps export duties on agricultural commodities and government profits have been greater than total government subsidies to farmers for all purposes.

Again, there are many examples of state governments' widening their indirect tax base in agriculture sector. Purchase tax on sugarcane netted R. 222M in Maharashtra which was higher than its land revenue collection of 200 M. UP increased its revenue from the purchase tax by 374.3 per cent between 1968-69 and 1978-79. Other sugarcane growing states could also mobilise more revenue from this source.

Market fee has proved to be another productive levy which many states have on agricultural commodities. It is, however, earmarked and following the principle of quid-pre-quo is supposed to be paid back in some form to the same class of people from whom it was collected. But it can certainly be used to strengthen the market structure which is not keeping pace with agricultural production technology available to the states.

Again, taxes and subsidies re-embedded in the price structure of many commodities in ways that make it difficult for those who are being taxed to recognise the transfer element. It is estimated that in one year (1974-75) the loss to the farmers from receiving less than world market price (negative price coefficient) was more than ten times as great as subsidies received from the Govt. Wheat imports during 1981 and 1982 at a landed cost of about Rs. 200 per quintal against the wheat procurement price of Rs. 142 per qtl. for 1981-82 and Rs. 150 per qtl. recommended by the Agricultural Prices Commission for 1982-83 crop support the same proposition.

Taxing farm inputs

Subsidies on farm inputs and particularly on fertilizers have come under heavy attack. We do not suggest that such subsidies should not be kept under control but it is quite revealing that budgeted subsidies do not reflect their real burden. What is really relevant is producer subsidy equivalent which is the subsidy not of indirect taxes. Fertilizer real subsidy was first provided during 1974-75 (Rs. 974 M). From 1975-76 to 1977-78 the government received more through customs and excise duties on fertilizers than it provided for fertilizers subsidy. During 1978-79, the real fertilizers subsidy was Rs. 816 compared to Rs. 3,190 M provided as gross subsidy in the government budget. In 1979-80, gross subsidy swelled to Rs. 6,380 M when the real subsidy was Rs. 4,685 M. It was only after June 1980 when international fertilizer prices shot up that the customs and excise duties on fertilizers were completely withdrawn on controlled fertilizers that the revised estimate of gross fertilizer subsidy of Rs. 4,662 M came close to real subsidy of Rs. 4,288 M during 1980-81. For 1981-82, they were further close to each other at Rs. 6,789 M and Rs. 6,661 M respectively.

Pricing Support Services

Therefore still some other forms of resource mobilisation which can be explored to offset the burden of subsidies in the agriculture sector. Both the Central and State governments are considerably expended support services to the agriculture sector. To mention only some, large public investments are made on certified seed production, extention services, artificial insemination and health care. With the modernisation of agriculture, demand for high quality support service should expand, which is difficult to be made by the government atleast in agriculturally progressive states where formers would prefer to pay for a quality service rather than relying on variable quality service provided by the government department, particularly where timeliness, efficient and effective service are the key to the success of operations|enterprises. Some of these services could be transferred to parastatals which can charge price for reliable and quality ensured support services, which would, in turn, help reduce budgetary subsidies.

Irrigation Subsidies

Among the subsidies provided to the agriculture sector if there are any which have become indefensible over the long years, these are budgeted subsidies on surface irrigation and specially those which are implicity in the ailure of water charges to recover the economic cost of such services. Water rates are not only low but they differ widely from state to state (Table 3). In certain states receipts are not sufficient even to cover working expenses, let alone interest payments. Such irrigation losses in effect represent a subsidy to farmers who take water from government sources. Table 4 shows average revenues, expenditures and losses suffered by the states from major and medium irrigation for the period 1977-78 through 1980-81. These data no doubt relate to irrigation, nevigation, drainage and flood control projects, but they make it evident that none of the states is making profits from heavy investments on these projects and the average annual losses were as high as Rs. 571 M in Maharashtra and Rs. 502 M in Andhra Pradesh. Whereas losses suffered by A.P. are understandable, as the state has the lowest implicit water rate of only Rs. 5 per hectare|year, it is quite a disturbing trend that Maharashtra is sustaining such heavy losses inspite of the highest implicity water rate of Rs. 1.35 per ha|year. It would be quite revealing to investigate the expenditure pattern, overhead costs and all other factors which contribute to this dismal situation. The situation is not much better in some other states either. Karnataka ranks third in making such losses (Rs. 392 M). Rajasthan, Haryana and West Bengal loss annually between Rs. 256 to Rs. 300 million, even Gujarat suffers an average annual loss of Rs. 207 million on this account. Column 17 of table 4 shows the increase in water rates per ha|year, required to wipe out these losses. Normally, these losses should be divided by the irrigation potential actually utilised (col. 3) to obtain this estimated but even if the losses are divided by the full irrigation potential created, substantial increases in irrigation rates would be required to cover the losses. In the case of Maharashtra for example, water rates have to be raised to Rs. 462 per ha|year to cover the losses at the present implicity water rate of Rs. 135 per ha|year. Infact, at the present implicit water rate of Rs. 135 per ha|year, even full irrigation potential of 1.235 million hectares in Maharashtra would yield only Rs. 166.7 million when the losses are as high as Rs. 571 million. In the case of Karnataka, water rates have to be increased to Rs. 365 per ha|year to wipe out such losses. The situation is not much different in some other states—what comes out very clearly, however, is that the irrigation system is not paying even a minimum return on the heavy expenditures incurred on creating the irrigation potential. Water charge and other related charges are the prime vehicle for recovery of capital and D&M costs. It is argued that increases in agricultural incomes would generate growth both in agriculture and non-agriculture sector which would further increase the revenues of central and state Govts. But this argument should not be extended so far as not to recover the project costs from the beneficiaries, particularly when India is facing gradual emergence of resource crisis. The argument for raising the water rates and cutting down the losses becomes all the more evident when we refer to the ARDC (now known as Nabard) studies which show that financial returns to minor irrigation investment range between 20 to 50 per cent and the return to land development in the command area of irrigation projects exceed 50 per cent.

TABLE 1

AGRICULTURAL INCOME TAX, LAND REVENUE AND TAXES AND SURCHARGE ON CASH CROPS, IMPORTANT STATES

Rs. Million

	1970-71				1979-80 (Accounts)				1980-81 (Revised Estimates)				Land Revenue per ha (Rs.) (79-80) (c)
	Agrl. Income Tax	Land Revenue	Surcharge on cash crops (a)	Taxes on Sugarcane (b)	Agrl. Income Tax	Land Rev.	Sur. on cash crops (a)	Taxes on Sugarcane (b)	Agrl. Inc.	Land	Sur. on cash crops (a)	Tax on sugarcane (b)	
Andhra Pradesh	..	201	..	11	..	319	..	28	..	320	..	29	29.21
Assam	21	70	..	..	175	30	..	..	170	19	..	..	11.19
Bihar	3	70	..	20	..	117	..	5	0.1	144	..	25	13.64
Gujarat	..	90	..	..	..	88	..	..	..	80	..	..	9.24
Haryana	..	13	3	4	..	32	..	19	..	40	..	20	8.79
Himachal Pradesh	..	1	..	..	..	6	..	..	..	6	..	..	10.71
Jammu & Kashmir	..	5	..	..	..	7	..	..	..	7	..	..	9.86
Karnataka	16	47	.	..	156	69	..	..	110	60	..	..	6.75
Kerala	33	12	..	.	106	33	..	..	115	33	..	..	15.00
Madhya Pradesh	..	73	..	..	..	79	..	..	..	86	..	..	4.20
Maharashtra	0.5	99	..	44	5	197	..	222	4	205	..	150	10.79
Orissa	0.8	17	..	..	0.2	47	..	..	..	46	..	..	7.83
Punjab	..	17	..	..	..	15	11	..	..	13	15	..	3.60
Rajasthan	0.1	107	..	..	..	77	0.4	..	..	67	0.5	..	5.08
Tamil Nadu	18	42	..	..	68	81	..	3	60	16	..	30	12.86
Uttar Pradesh	2	221	..	47	..	260	..	217	..	201	..	181	14.93
West Bengal	11	40	..	..	73	59	..	..	43	94	..	..	9.55
TOTAL (22 States)	105	1126	3	129	584	1519	12	494	501	1441	16	436	10.75

Source : Reserve Bank of India Bulletin, August 1981 and August 1973.

(a) Relates to surcharge on commercial crops other than sugarcane.

(b) Purchase Tax on sugarcane. There was a separate item of surcharge and cess on sugarcane but there was no revenue recorded under this account in 1979-80 and 1980-81.

(c) Based on net area sown for 1977-78.

TABLE 2

DIRECT TAXES IN AGRICULTURE, 1970-71 to 1981-82 (a)

Rs. Million

Year	Agrl. Income Tax	Land Revenue	Stamps & Registration Fees (b)	Total Direct Agrl. Taxes	Direct tax burden per ha (c) (Rs.)
1970-71	105	1126	244	1475	10.48
1971-72	128	1008	274	1410	10.07
1972-73	124	929	289	1342	9.76
1973-74	118	1570	344	2032	14.20
1974-75	139	1605	410	2154	15.57
1975-76	285	2297	434	3016	21.21
1976-77	346	1830	464	2640	18.83
1977-78	620	1661	573	2854	19.99
1978-79	803	1883	667	3353	23.48
1979-80	579	1519	736	2839	19.88
1980-81 (RE)	501	1441	839	2781	19.47
1981-82 (BE)	626	1704	892	3222	22 56

Source : Reserve Bank of India, "Report on Currency & Finance" various issues and Reserve Bank of India Bulletin, various issues.

(a) The figures relate to 22 states. GOI figures for Union Territories are not readily available.

(b) 20 per cent of total tax collection as stamps and registration has been taken for agriculture (see M.T. Pathak and A.S. Patel, "Agricultural Taxation in Gujarat", The Council for Economic Education, Bombay, 1968 p 23.

(c) Calculated on the basis of net area sown. For 1978-79 to 1981-82, net area sown is taken to be equal to that during 1977-78.

TABLE 3

WATER RATES FOR FLOW IRRIGATION, 1951 AND 1978

Rs. per hectare

State (a)	Sugarcane		Paddy		Wheat		Dry crops	
	1951	1978	1951	1978	1951	1978	1951	1978
Andhra Pradesh	15.00	80.00	10.00	40.00	..	..	5.00	15.00
Assam(b)	..	..	..	225.00	..	112.50	..	..
Bihar	.	137.50	12.50	78.75	8.12	45.00		48.75
Haryana	41.25	100.00	24.38	75.00	15.92	62.50	12.19	50.00
Jammu & Kashmir	16.19	20.31	16.19	20.31	7.60	10.94	6.19	7.81
Karnataka	87.50	360.00	10.00	75.00	15.00	45.00	..	45.00
Kerala	15.00(c)		15.00(c)	100.00		.	5.00(c)	..
Madhya Pradesh	75.00	105.00	300.00	60.00	25.00	37.50	10.00	30.00
Maharashtra	200.00	750.00	12.50	50 00	20.00	75 00	30 00	150.00
Orissa	18.75	67.50	10.62	20.00	5.00	22.50	6.25	7.50
Punjab	41.25	67.50	24.38	48.75	15.94	29.22	12.19	22.35
Rajasthan	24.00	100.00	16.00	70.00	11.50	52.50	7.00	50.00
Tamil Nadu	15.00	63.75	10.00	42.50	..	..	5.00	33.75
Uttar Pradesh	56.25	165.00	18.75	100.00	18.75	100 00	..	..
West Bengal	.	.	10.00	37.50	5.62	50.00	.	125.00

(a) Information for Gujarat and Himachal Pradesh is not available.

(b) Assam has no water rates at present. Rates mentioned are realized on mutual agreement.

(c) Rates indicated are for 1976.

TABLE

INDIA

State-wise Irrigation losses free from Major and

State(b)	Irrigation (c) 000 ha		Revenue Rs. M			Average Rev.	Expenditure Rs. M	
	Potential	Utilization	1978-79	1979-80	1980-81	1978-79 to 1980-81	1978-79	1979-80
Uttar Pradesh	6029	4941	333.0	323.2	223.2	293.13	434.5	519.1
Andhra Pradesh	2937	2846	14.8	15.0	11.2	13.67	426.5	510.8
Bihar	2452	1720	28.7	43.7	67.6	46.67	85.9	105.2
Punjab	2309	2304	79.1	82.5	90.0	83.87	132.0	154.8
Haryana	1769	1630	40.4	32.3	53.5	42.07	269.3	327.5
Rajasthan	1535	1334	72.4	63.3	66.8	67.50	342.4	369.7
West Bengal	1526	1406	6.5	8.6	13.2	9.43	353.7	273.9
Orissa	1426	1426	24.1	25.1	26.2	25 13	198 1	116.
Maharashtra	1235	615	71.3	91.2	86.7	83.07	544 0	652.3
Tamil Nadu	1179	1165	10.3	8.2	32 7	17.07	287.0	259.6
Karnataka	1074	1052	67.6	65.0	45.0	59 20	384.3	447.7
Gujarat	1030	562	45.8	49.6	50.5	48.63	197.6	229.6
Kerala	458	438	11.5	18.2	18.7	16 13	68 4	59.5
Total (above states)	26401	22482	805.5	825.9	785.3		3723.7	4025.7
Total (all states) (g)	26602	22635	853.5	866.0	873.5		3820.0	4080.5

(a) The data relate to irrigation, navigation, drainage and flood control projects. It is shown together in the GOS Budgets and relates to the recurring account as shown in Revenue Accounts. The investment is shown separately in the Capital Accounts. (Source : Reserve Bank of India, "Finances of State Governments during 1980-81" *Réserve Bank of India* Bulletins, September and October 1980, & August 1981 issues.

(b) The states where potential created is less than 0.2 m.ha are excluded. These are Assam, Jammu & Kashmir, Manipur, Himachal Pradesh, Tripura, Sikkim, Nagaland and Meghalaya. Date for M.P. do not seem to be reliable.

(c) Irrigation potential created and utilization through major and medium irrigation projects upto end of 1979-80. Source : Sixth Five Year Plan 1980-85, pp.162.

Sweet Karnataka

M. R. Gavirayappa

KARNATAKA IS ENDOWED WITH favourable agro-climatic conditions for sugarcane cultivation. The State recorded a bumper sugarcane production of 127 crore tonnes during 1981-82. This represents an increase of 27 lakh tonnes over the previous year's production. This increase in cane production has been mainly attributed to the fact that the growers had received attractive prices from the Sugar Factories. Sugarcane was grown under the command area of all the major and medium irrigation projects covering an area of more than 1.15 lakh hectares. According to an official report a total of over 6.60 lakh tonnes of sugar was produced in the State by crushing over 65,15,000 tonnes of sugarcane during 1981-82.

In the State, there are, in all, 28 sugar factories of which 18 are in cooperative sector, 7 in private sector, 2 in joint sector and one under Government. One of the factories in the cooperative sector namely Hranyakeshi Cooperative Sugar Factory at Sankeshwar in Belgaum District has achieved the highest percentage of recover of 11.13. It crushed a total of 41,950 tonnes of sugarcane per day. The present total installed crushing capacity of the sugar factories is of

Medium Irrigation **1978-79** *through* **1980-81**

	Average Expenditure	Profit (+) or loss (—) Rs. M			Average Profit (+) or loss	Average (d) water rate Rs/ha/year	Increase in (e) water rates required to compensate the loss Rs/ha/year	% Potential utilized
1980-81	1978-79 to	1978-79	1979-80	1980-81				
696.5	550.03	—101.5	-195.90	-473.3	-256.90	60	42.61	82
609.8	515.70	-411.7	—495.80	-598.6	-502.03	5	170.93	97
110.0	100.43	-52.2	-61.50	—42.4	—53.76	27	21.92	70
166.1	150.97	-52.9	-72 30	—76.1	-67.10	36	29.06	100
407.6	334.80	—228.9	-295.20	-354.1	—292.73	26	165.48	92
391.8	367.97	-270.0	-306.41	-325.0	—300.47	50	195.75	87
180.1	269.23	-347 2	-265.30	-166.9	-259.80	7	170.25	92
175.2	163.10	-174.0	-90.90	-149.0	-137.97	18	96.75	100
765.6	653.97	-472.7	-561.10	-678.9	-570.90	135	462.27	50
261.9	269.56	-276.7	-251.40	—229.2	—252.43	15	214.11	99
522.6	451.53	-316.7	-382.70	-477.6	-392.33	57	365.30	98
340.6	255.73	-151.8	-180.00	-289.5	-207.10	87	207.07	55
81.4	69.77	-56.9	41.30	67.7	-53.64	37	117.12	96
4708.6		—2913.0	—3199.81	—3923.3		43	109	85
4947.7		—2966.5	—3389 2			38	112	85

(d) Average revenue (1978/79 to 1980/81) divided by the potential utilized.

(e) Average loss (1978/79 to 1980/81) divided by the total potential created. Note that these are over estimated to the extent the expenditure and the losses also include some non-irrigation part as on navigation, drainage and flood control.

(f) There was no loss during 1978/79. But in 1979-80, revenue, expenditure as well as losses were the maximum. The increase in water rates required on this basis is Rs. 31 per ha per year.

(g) Includes the states mentioned in (b) above.

the order of 41,000 tonnes. This is expected to go upto 53,000 tonnes by 1985-86.

In order to provide a single agency to deal with all matters relating to sugar industries, the State Government has set up a separate Directorate which is soon stepping into its tenth year of operation.

The total investment in all the existing sugar factories is of the order of Rs. 117 crore. Of this, the cooperative factories' share alone is as much as Rs. 90 crore. They have together collected Rs. 1.50 crore as share capital from their members.

The State Government has invested Rs. 14.12 crore so far in cooperative sugar factories. The National Cooperative Development Corporation has sanctioned a loan of Rs. 4.72 crores. The Industrial Credit and investment Corporation of India, Industrial Development Bank of India and the LIC of India have so far invested nearly Rs. 23 crore.

The Sugar Industry has tremendous scope for development in future. It has been programmed to establish eight more sugar factories in the Sixth Plan period, all in the cooperative sector. Construction in respect of three of them at Hassan, Havery and Brahmavara near Udupi is in various stages of progress. The State Government has released Rs. 1.30 crore share capital during 1981-82 to these factories.

The 'triple' action alone could remove poverty

While welcoming the government's aim to reduce poverty percentage from 48 to 30 during the Sixth Plan, the author sets three conditions for achieving this. These are:—distribution of assets like ownership of land, cattle, equipment etc. to be implemented on a cooperative basis, closing the loopholes in the land reform legislation, helping the destitute who form the bottom 20 per cent of the poor and the fight the war against poverty should be urged by the poor themselves.

MALCOLM S. ADISESHIAH, M.P.

THE poor are always with us, said Jesus Christ, 2000 years ago. Infact in his teaching and that of other religious leaders like the Buddha and Mahavira, there is a certain commendation of poverty. Nesus in his Sermon on the Mount blessed the poor in spirit, and on another occasion spoke of it being more difficult for a rich man to enter the Kingdom of heaven than for a camel to pass through a needle's age. Both Gautama and Vardhamana gave up their rich, well to do princely ways of life and embraced poverty as a means of attaining enlightment and through the ages the beggar's bowl has received a certain sacredness and sanctity that has become part of our culture and civilization. Through our history, our great religious leaders and reformers like Sankaracharya, Vivekananda. Ramakrishna, Ramana and Juhar non Mar Thoma embraced poverty voluntarily as the only means of developing their spiritual insights and diffusing the great religious truths as they saw and perceived them. In our own times Gandhiji donned the life of the poor peasant as a means of understanding his problems, serving him, and joining with him to fight for the liberation of himself and the country. This brief attempt to encapsule centuries of human history and India's own special tradition brings out two important facets of poverty. First that it is as old as man himself and second voluntarily adopted, it has an ennobling quality. The poverty under reference here encompasses a style of living which is simple, meeting all the minimal physical requirements of living, and which has either no access to or shuns property and assets in any form, and all the luxuries, ostentation and conspicuous items of consumption that goes with riches and affluence. And the poverty which is commended and demonstrated in their lives by our sages and saints is always the poverty which is voluntarily invited and accepted by an individual or a group.

Poverty as a denial of life

The poverty that we are concerned with in this lecture however denies both these features namely, the provision of minimum standards of living and/or its voluntary acceptance as a way of life.

What is the poverty we deal within this lecture ?

We in India have adopted a rather low and sparse level of living to define the poor in our country. Back in 1962, a group of economists and political leaders (The group comprised Prof. D. R. Gadgil, Dr. B. N. Ganguli, Dr. P. S. Lokanathan, Mr. M. R. Masani, Mr. Ashok Mehta, Mr. Pitambar Pant, Dr. V. K. R. V. Rao, Mr. Shriman Narayana and Mr. Annasaheb Sahanabudaah) took an individual's food intake of 2400 calories per day in rural areas and 2100 calories per day in urban areas as the indicator of not being poor. All those whose food intake was below these norms were poor. They then proceeded to turn these calories into the appropriate quantities of cereals, pulses and sugar, milk, vegetables and oils and using the prices then prevailing established a monthly expenditure of Rs. 20 per person in the rural and Rs. 25 per person in the urban area as the line which separate the poor from the non-poor. Thus this per capita monthly expenditure (in 1960 prices) of Rs. 20-25 has come to be established as the poverty line. All those who are not able to spend this amount in a month are living in poverty. Certain features of this characterisation of the poor should be noted. First the estimate of calories needed to keep alive varies to a certain extent in accordance with the differing views of different nutritionists. Thus some have used the figure of 2250 calories per day, others 2100 calories plus 55 grams of protein per day and so on and each of these give a slightly different money figure. Second what is common to all of these variations is that they vary around a few points this way or that, but all of them just provide for keeping body and soul alive. In other words they cannot be called a minimum standard of life, they are rather a means of bare living. This was recognised by the Planning Commission itself when it accepted the Rs. 20-25 monthly expenditure per person, but in doing so said that a balanced diet will cost Rs. 35 which "is by no means a high standard", which it however rejected because it felt that we as a country cannot afford it.

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*Extracts from a paper by Dr. Malcolm S. Adiseshiah for the Sixth Juhanon Mar Thoma memorial lecture held at the Constitution Club, New Delhi on December 6, 1982.

And so using this standard worked out in 1962, our sixth Five Year Plan states that the above poverty line in 1979-80 prices becomes Rs. 76 in rural areas and Rs. 88 in urban areas and that on this basis 50.82 per cent of our fellow country men and women living in rural areas are not able to spend Rs. 76 a month and 38.19 per cent of our people living in urban areas are not able to spend Rs. 88 a month. In other words out of a total of 654 million people living in our country 317 million men, women and children are living in poverty.

These 317 million persons live at various levels of poverty. There are the extreme destitutes who are spending between Rs. 0-15 per person per month who are 3.5 million in rural areas and 0.2 million in urban areas. In the next level are 16 million people in rural and 1 million in urban areas who spend Rs. 15-21 per person per month. The third level from the bottom comprises 43 million persons in rural and 5 million persons in urban areas who spend Rs. 21-28 per person per month. The fourth level includes 56 million persons in rural and 26 million in urban areas, spending Rs. 28-34 per person per month in rural and Rs. 28-43 in urban areas. These 4 groups of destitutes number less than 200 million and the balance of 120 million are poor but not destitute. When it comes to policy and action to remove poverty which we shall deal with later, this disaggregation of the poor into the severe destitutes, other destitutes and poor will be important.

What is poverty?

One further consideration on this issue is, what is poverty in India and how many of our people live in poverty. And that is what makes poverty unbearable is that it coexists with affluence. Poverty of the abject kind that we have in India as noted above is unhuman. But the poverty of the many existing alongside of riches of the few is inequality amounting to inequity. Government reports that in 1977-78 the bottom 50 per cent consumed 29 per cent of all goods and services in the country, while the top 30 per cent consumed 52 per cent, the bottom 10 per cent consumed 3.5 per cent while the top 10 per cent consumed 26 per cent. The Reserve Bank of India surveys every 10 years the distribution of assets in rural areas. It reports that the bottom 10 per cent of rural society owned 0.1 per cent of rural assets in 1961 and the same 0.1 per cent in 1971, and that the next 30 per cent which owned 2.5 per cent of all assets in 1961 lost out and had only 2 per cent in 1971. The top 30 per cent increased their already large share from 79 per cent of all rural property in 1961 to 82 per cent in 1971. It also reports that small and marginal farmers (each farming less than 2 hectares) constitute 73 per cent of all farmers but cultivate only 23 per cent of land, while large farmers (operating over 10 hectares) are only 3 per cent of farmers but cultivate 26 per cent of all land. This inequality in property and land ownership leads to some (the rich few) being able to have a large and growing income and others (the poor majority) having a low and declining income. Inequality feeds and enlarges the area of our poverty.

Poverty as comprising certain occupations and communities

Who then are these poor ? What is it that they are doing ? In the rural area, where 80 per cent of them live, they are composed of (a) agricultural labourers who are usually landless, working for a wage and constitute over half of the 260 million men, women and children who are the rural poor, (b) small and marginal cultivators who are about 35 per cent of the rural poor, and (c) handloom weavers, construction workers, blacksmiths, carpenters, potters, tanners cobblers, craftsmen and fishermen, who together make up the remaining 12 per cent of the rural poor. In urban areas the poor people number 57 million men, women and children who are (a) construction workers, (b) the self employed, (c) wage workers in petty production trade and ser-

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Pedal-operated Irrigation pump

Ajith Venniyur

THE KERALA GANDHI SMARAK NIDHI, Trivandrum, is a voluntary organisation devoted to rural development on Gandhian lines. The institution's latest contribution in the field of agricultural development is the introduction of the Jayanti Irrigation pump.

The Jayanti pump consists of a metal cylinder of 30 cms. circumference with two internal chambers fitted with diaphrams on both their sides. It is pedal-operated. Pedalling by foot causes the diaphrams to move, creating a vacuum in one chamber and pressure in the other. This makes water rise up and fill the vacuum chamber and the pressure in the other chamber then pushes it out.

The operation of the pump is thus quite simple. Also it is easily portable and can be installed without difficulty near a pond or a canal where water is available. It can pump more than 30 litres of water per minute. Its greatest advantage is that no electricity or oil is needed to run it. Moreover, an ordinary rural farmer can easily master the technique and also see to its maintenance.

The present estimated cost of the pump is Rs. 1000 but it is likely to come down since the Nidhi has planned to manufacture it on a commercial scale vices, (d) domestic servants and (e) the unemployed. The poor are mainly from the scheduled castes and scheduled tribes and other backward classes, they are illiterate, they have poor health and difficult access to public health facilities, live in huts or urban slums and their consumption of cloth has been worked out at an annual 3 metres per person compared to 25 to 35 metres per head consumed by the top 30 per cent of society.

Poverty causes

What causes this poverty ? The most common causes for poverty is seen in the nature of occupations listed above as pursued by the people who are living in poverty. It will be see that all the poor are at work, but are not able to earn enough for them and their families to live at a minimum level or standard. This is something that is special about poor in India and other developing countries, unlike the poor in the United States or Europe. When the poor in the industrialised countries are unemployed in the full and real sense of the word, during the period of their unemployment they are covered by the government's unemployment benefit scheme. In India full time unemployment is almost unknown. It is officially established at less than 1.7 per cent of our work force (compared to the 10 per cent common in France, Britain and the US), because in the absence of unemployment benefit, our people cannot afford to be full time unemployed as then they will simply starve and die. And so everyone is at same work, if it be only digging at barren earth for some dry roots for food. Our poor are the working poor, but their work does not lead to gainful employment, and so our poor are people who are underemployed or are in disguised unemployment. Underemployment or disguised unemployment involves a person working either at less than his full capacity or being paid at much less than what he should, even if he works at full capacity. Poverty is caused by under employment and disguised unemployment of our workers particularly in the rural areas and urban slums.

This is seen in the fact that of the 240 million persons in our work force in 1980, 4.1 million were totally unemployed (which is the 1.7 per cent referred to earlier), 168 million had stable employment (70 per cent of the work force) including 130 million being self employed, and 67.9 million were casual workers. The Sixth Plan estimates that severe underemployment and disguised unemployment amounted in 1980 to the equivalent of 20.74 million unemployed.

All the workers, whether instable or casual employment, except for those working in manufacturing industries and who are unionised, receive sub-standard wages. The National Minimum Wage Act enacted in 1948 was left to the state governments for its execution, and the Sixth Plan on this makes the understatement that "slow coverage of new employment, delay in periodical revisions of the minimum rates fixed under the Act, and in effective enforcement of the existing provisions" have characterised its execution or rather non execution. In the rural areas there are no minimum wages and where one exists, is not observed by the employer. This is one of the major reasons for the under-employment and poverty of our workers working in agriculture and in the non-organised sector. Even when the wages are revised in money terms, they do not keep up with the rise in prices, so that real wages fall. In my state, Tamil Nadu, a study on agricultural wages show that while money wages rose from 100 in 1951-52 to 225 in 1973-74, real wages declined from 100 to 71 in that period.

Workforce Static

In so explaining the cause for poverty stemming from underemployment, it is interesting (and depressing) to see that the share of our workforce in agriculture has been static for over 60 years. 73 per cent of our workers were working in agriculture in 1921, 73 per cent in 1961, and 73.8 in 1978. In industry about 9.10 per cent of our workforce has been engaged ever since we became independent 30 years ago. On the question, whether agriculture is creating underemployment and adding to people's poverty, opinion is divided. There are those including an important political party—who believe that the increasing pressure of labour on the agriculture sector is making far more and more underemployment of workers and for poverty caused by the low and falling wages received by the labour. They advocate moving workers out of agriculture to other occupations. On the other hand, there are others who believe that agriculture is not suffering from over employment. If the number of workers employed per hectare in Indian agriculture is compared with the number of workers and their higher wages and productivity per person in Thailand, Phillippines and Japan, it will be seen that our agriculture has still further employment capacity and possibility of increasing productivity and wages. I belong to this latter school.

The other cause for our poverty and poor employment record is that though we have invested Rs. 2,77, 189 crores in agriculture and industry since we began planning after our independence three decades ago, our investments have been so capital intensive that adequate employment has not been created. The Draft Five Year Plan 1978—83 expressed this problem of paucity of employment generation despite the large amount of capital invested in the mining and manufacturing sectors as follows: "Investment and output have grown at a high rate but the production mix and the technology mix have been so capital intensive that employment did not grow *pari passu*. Between 1961 and 1976, for example, in the modern factory sector, investment increased 139 per cent and output 161 per cent, but employment increased only 71 per cent. Therefore employment per unit of gross output decreased by 34 per cent and employment per unit of capital declined by 28 per cent. Recorded employment in the organised sector (including all plantations, mines, manufacturing, utilities, public services and all reporting units in trade and transport) absorbs just about 11 per cent of the current annual increase in the labour force, the remaining 89 per cent of the annual increase in the labour force of about 4.45 million young workers are forced to hang on for some livelihood, either on agriculture or some other small unit activity (in units with less than 10 workers)". This trend to increase capital and reduce the labour employed is also beginning to occur in some of the agricultural areas of our country. In Haryana, Punjab and Western UP where agricultural production is heavily tractorised, employment of agricultural labourers is declining. Whether this decline is due to the scarcity of labour in these states which according to the employing farmers is leading them to use tractors, threshers and other capital intensive and labour saving techniques, or whether the use of these capital intensive means of production are throwing labour out of work is still in dispute. But what is not in dispute is that our style of economic growth has not been one that has made for employing gainfully our growing population and work force.

Share of national income

And to this should be added, another facet of inequality which has made for poverty, and that is that the share of the national income which accures to workers who belong to lower 40-60 per cent of society has over the 3 decades stagnated and more recently declined, while the share of the employers, large farmers and the professional classes has increased. This is demonstrated in the consumption expenditure of the two groups referred to earlier. And the factors operating behind this serious social and personal inequality include (a) inequality in ownership of land. industrial assets and housing which leads to some earning property incomes and being rich and others having no property of any kind, depending for their income on sale of their labour which is usually at low levels, (b) inflation which leads to increase in the value of property and the incomes derived from property, while the same inflation raises the prices of essential goods which the poor majority consumers and so lowers the already low living levels of the 40-60 per cent of our fellow men, women and children living in poverty, and (c) the growing unreported economy, which is a term that I prefer to the more popular term, black money and black incomes and black wealth, because of its racist over tones. The last time there was an official reckoning of how much money and wealth there is in this unreported sector, the illegal sector of our economy, was by a British economist, Nick Kaldor in 1953-54, who estimates it at that time at Rs. 600 crores, the Direct Taxation Enquiry (Wanchoo) committee estimated it at Rs. 1,400 crores a decade and a half later in 1968-69, after which economists have estimated it at Rs. 8,098 crores ten years later in 1976-77, and at Rs. 46,867 crores in 1978-79 which means that the unreported|illegal economy is estimated to have grown from 6 per cent of our national income in 1953-54 to about 50 per cent of our national income today. There is a difference of opinion about the precise size of the unreported and illegal economy. But that it is growing rapidly like a cholera germ thrown in water, and that it is generating new incomes and new wealth at higher and higher rates there is general agreement. What we are here concerned with is that this illegal sector causes poverty for the majority. The few who are in it conceal their wealth by investing it illegally or semi illegally in shares, property, gold and silver, and spending it on travel, high fee schooling, ostentatious living, five star culture, charities and donations, and election financing. All this involves transferring money and resources from the poor to the rich, thus widening the circle of poor people in the country.

The fight against poverty

The fight against poverty, the programme to give the majority of our people living in poverty a decent standard of living has two dimensions. The first and immediate dimension is relief. The second is the eradication of the root causes of poverty.

The immediate task is to relieve the poor people from the consequence and facets of poverty that they suffer from namely inadequate food expressed in under nourishment and malnutrition, lack of housing, unprotected drinking water, unsufficient clothing, ill health, illiteracy and lack of education facilities and deterioration of the environment-rural and urban. This relief programme is something which all of us who belong to the non-poor category can engage in and is a first charge on the christian church in the country. Probably the best course is for us to join and support what is called the government's minimum needs programme. For the Sixth Plan 1980-85, Rs. 5,800 crores have been set aside which is about double what was provided in the previous five years (a) to enrol 95 per cent of lower primary school age children and 50 per cent of upper primary age students and make about half of the adult illiterates (50 million) in the 15-35 years group literate. (b) to provide one community health volunteer for every village, one sub centre for every 5000 people, one PHC for every 30,000 people, and one community health centre for one CD block (c) to provide protected drinking water to all 1.90 lakh villages which have no assured source or which have endemic water borne diseases. (d) to electrify 47000 villages which means 40 per cent of all villages, (e) to provide slum improvement facilities, that is water supply, drains, streets, community latrines and street lighting to 10 million slum dwellers (of the 33 million), (f) to allot house sites to the 6.8 million families needing housing and provide 3.6 million with assistance for the construction of houses and huts, (g) to bring under the special nutrition programme an additional 5 million children and 5,00,000 pregnant and nursing mothers and (h) to provide 20,000 villages (out of 40,000) with all weather roads. In addition the public distribution net work which had 2.5 lakh fair price shops will have during the Sixth Plan 35 lakh shops through which essential commodities at controlled prices are provided, of food grains, sugar, edible oils, soft coke, kerosene, controlled cloth, tea, matches, soap, and note books. One of the tasks that needs to be performed in this vast programme, is for each village and town to have a group of non officials and here the local church can play a leading role, to see that these provisions of the minimum needs programme reach the poor people, and are not misappropriated by unscrupulous middle men and traders or corrupt officials.

Government programmes

Still in the broad area of relief of property, but at a second higher level of relief, should be classed all government programmes and plans to generate gainful employment. These include. (a) the Integrated Rural Development Programme (IRDP) which will assist 3,000 of the poorest families out of the 12,000 poor families living in each of our 5,000 blocks. 2000 through agriculture, 500 through village and cottage industries and 500 in the services sector with the annual Rs. 5-8 lakhs for each block plus Rs. 5 lakhs of bank credit. This programme is going well in the first two years of the current plan, helping over 27 lakh families each year, though the funds are proving inadequate: (b) the National Rural employment Programme (NREP) which the union and state governments are operating on a 50:50 basis, under which 300—400 million mandays of employment is to be generated each year through the creation of durable assets such as social forestry, pasture development, soil and water conservation irrigation, flood protection and drainage, field channels in irrigation command areas, construction and improvement of village tanks and ponds, school and dispensary buildings, and works to improve village roads, sanitation and hygiene. This programme is meant for the rural poor who are without any assets and need to be provided with wage employment. About half the wages are paid in foodgrain (2 Kgs) and the rest in cash. Under this programme in the first Plan year, 1980-81, 326.5 million mandays of employment was generated, but in the next year 1981-82 it declined to 30 million mandays and only 3 lakh tonnes of food grains were given as wages. I am afraid that with the very poor monsoon and widespread drought (and floods in some areas) this year, this poverty relief programme will once more be seriously hampered this year: (c) the special component plan under which 10 per cent of the NRFP is allocated for families belonging to the scheduled castes, particularly for their drinking water wells, community irrigation schemes and house sites and housing. This programme is going well; (d) the special area programme which is for the hill and tribal areas in Gujarat, Jammu and Kashmir, North East States and West Bengal for which Rs. 1370 crores have been provided. The programme has started rather slowly, too much time being spent on its planning: (c) other employment generating programmes are addressed to those who have some small assets, like small and marginal farmers who are 73 per cent of our farmers as noted earlier, the 557 drought prone blocks spread over 74 districts in the country, the desert development programme and the command area development programme. These programmes are meeting with various problems and bottlenecks: (h) and finally there are the animal husbandry, the cottage and village industries covering Khadi and Village industries, handloom, sericulture, handicrafts, coir industry etc. which are self employment programmes to which is attached a new programme, the scheme of Training Youth for self-employment under which 3 lakh rural youth have been trained for self employment. In all programmes where wage employment is created, it is essential that minimum wages be legislated in every state and that the minimum wages be linked to the consumer price index for agricultural workers. But above all there is need for both strengthening the enforcement machinery and the involvement of rural workers organisation in the implementation of the legislation. At present, there is wide disagreement among the states about the union government enacting a minimum wages model Act, and as the legislatures and governments have a strong large farmers lobby, there is need for the others who are in a numerical majority to mount a campaign to see that minimum wages bill be enacted and really and fully given effect to. All these latter programmes are reported to have created an additional 10 lakh jobs during the first two years of the Plan and of producing assets of over Rs. 400 lakhs in that period. At this second level of relief of poverty through IRDP, NREP, and the other 3 sets of programmes, the accomplishments are mixed and here again it is necessary for non-official groups to watch these programmes and participate in them and ensure that the benefits and programmes legislated for the poor reach the poor.

Tax System

At a third level to fight poverty which goes beyond relief of poverty in aiming to reduce inequalities is the tax system, under which those with large incomes and poverty are taxes at progressively, higher rates and the proceeds of the taxes used both for relief of poverty and creating assets which the poor can own. Here our record is not a happy one. At the time of independence our direct taxes (which are paid by the well to do) were 52.7 per cent and indirect taxes (which are paid in the main by the poor) were 47.3 per cent of all taxes revenues. Today the position is reversed with the direct taxes on income and property of the well to do contributing 25 per cent and indirect taxes on commodities paid mainly by the poor (indirect taxes like medicine coated with sugar are hidden in the price of tea, cloth, matches, sugar, kerosene etc., and are paid by all and as the majority are poor are paid in the main by the poor) contribute 75 per cent of total tax revenues. Second under the scheme of various tax concessions, over 35 of the largest firms who made a net profit of Rs. 10.4 to 5283 lakhs a year do not pay any tax. Third, the government states that it is afraid of raising any further income tax, corporation tax, wealth tax and gift tax, because it will only increase the growing tax dodging and the illegal economy of the country. It is therefore with a deal of regret that I conclude that our tax system while raising resources to finance the relief programmes for the poor, raised those resources mainly from the poor themselves. It is a case of heads I win, tails you lose, what is given with one hand, being taken away with the other.

The second dimension of the fight against poverty—which is the cure of poverty—is to put some asset, some property in the hands of those who are poor today. The first such asset which the rural poor should have is land. Here the record of our land reform and distribution programme is poor. First we have diluted the land ceilings legislation and made it so difficult to operate—by the provision that any land acquired by the state for distribution to the poor should be compensated at the full market rate, and by allowing the right of judicial appeal which is blocking over 2,00,000 land acquisition cases—that out of 22 million, potential surplus acres, only 41 lakh acres have been declared surplus, 26.5 lakh acres taken possession of and 18.3 lakh acres distributed to 13.22 lakh beneficiaries. I agree with the economist who point out that if all land above a certain ceiling of say 20 acres was available for distribution, it can be distributed either to the landless agricultural labourers giving them each an average of 2-3 acres or the small and marginal cultivators giving them each the same additional land. In either case, there will be about 100 million poor persons left out. This is true but this is not a reason for not honestly implementing the land ceiling legislation and helping over half of the poor. The government proposes in the Sixth Plan that it will aim at distributing 5 per cent of the declared surplus land. A distinguished economist of this church in a recent study shows that if this is really carried out it will mean redistribution of 57 lakh hectares, which is eight times of the 6.79 lakh hectares that has been distributed so far in over 3 decades since we attained independence. Let us insist on this target of the Sixth Plan on land distribution being carried out and the distributed land to be consolidated in cooperatives and to that extent we would in part be reducing poverty.

Cooperatives

Other ways of placing some asset in the hands of the poor households is through the cooperative animal husbandry and dairy development programme which will place cattle in each household, through the cottage small industries programmes which will in cooperatives of the members make some machines and technological tools available to the households. This should be on adjunct to the self employment programmes whereby each poor household is provided with some income earning asset. This will also be applicable to the urban poor.

In thus fighting poverty, the government states that its aims to bring 100 million persons now living in poverty all of poverty during the Sixth Five Year Plan—reducing our poverty percentage from 48 per cent to 30 per cent of the population. This is a good objective but will not be attained wihout 3 preconditions.

First the assets distribution in ownership of land, cattle, equipment and machinery as set forth above should be fully and faithfully implemented on a cooperative basis and the present loopholes in the land reform legislation through which whole of troops of elephants are walking out should be closed.

Second it is important that those who are the most destitutes, the bottom 20 per cent of the poor people, should be helped first. Earlier, the five levels of poverty and destitution were referred to. Little purpose will be served by pulling up above the poverty level the top 20 per cent of the people living in poverty. Absolute priority should be given to pulling up out of the poverty those living in dire destitution.

Finally the success of this programme to fight and win the war against poverty should be waged by the poor themselves. This means that it is the poor who should organise themselves to fight for their rights—the rights which have been legislated for them by Parliament, the state legislatures—the right to water, HYV seeds, to fertilisers, to bank credit, to animal husbandry, to small and cottage industry, to the distribution surplus land—all of which are now being diverted for their own benefit by the rural rich, by the big and medium landlords and traders. This organisation of the poor by the poor is the key instrument to fight poverty, to relieve it, ameliorate it and eradicate it. The Draft Five Year 1978—83 suggested this innovation, and the ministry of rural development has now circularised all the states that the IRDP and NREP programmes should be used to bring together groups of assisted families to ensure that the benefits of these programmes reach the poor. The church and other men and women of good will can use their organisation of agricultural extension, rural reconstruction, adult literacy and non formal education and religious gathering facilitating the poor in organising themselves to fight against poverty, inequality and injustice. ☐

Maharashtra Annual Plan

Maharashtra will have an Annual Plan size of Rs. 1500 crores during 1983-84, an increase of Rs. 178 crores over the current Annual Plan outlay.

Shri Chavan, who reviewed the performance of the current Annual Plan of the State, urged special efforts to realise the targets of the poverty alleviation programmes. It was necessary to have concrete time-bound programme for IRDP, NREP, Drinking Water Supply, Minor Irrigation and Scheduled Caste Component Plan Programmes and every effort made to complete these during the plan period.

Tamil Nadu Annual Plan

Tamil Nadu will have an Annual Plan outlay of Rs. 845 crores during 1983-84 as compared to Rs. 711 crores for the current years Annual Plan.

The State Government was requested to improve the working of the power plants already commissioned as also accelerate the progress of the ongoing new schemes. The outlay during 1983-84 for key sectors like agriculture, industries, transport, power and irrigation has been considerably stepped up.

Orissa Annual Plan

The Annual Plan of Orissa for 1983-84 will have an outlay of Rs. 345 crores against the outlay of Rs. 300 crores of the current Annual Plan. Shri Chavan reviewing the performance of the current annual Plan said that the State will have to concentrate on strengthening of the transmission lines in the State, since power is an important input for the speedy growth of the economy. The Planning Minister also advised the State to intensify the efforts in regard to poverty alleviation programme and vocational education.

Andhra Farmers' service societies, promise and performance

Farmer's Service Societies were established with an objective of providing integrated credit i.e., credit linked to input supply and marketing, but these societies in Andhra Pradesh concentrated only on credit disbursement and very little attention has been paid to non-credit services. The societies were expected to provide, besides credit facilities, full package of services such as supply of agricultural inputs, technical guidance, storage facilities, marketing and processing of the agricultural produce and distribution of consumer goods etc. Marketing, which is treated as an important aspect of integrated credit, is totally neglected in 18 *districts out of a total of* 19 *districts. The study shows that there is a gap between the promise and performance of the societies.*

DR. P. RAMAIAH, N. LINGAMURTHY AND G. SUDARSHAN

THERE were about 1200 Farmers Service Co-operative Societies registered and functioning by the end of June 1979. Andhra Pradesh is one of the states where a large number of F.S.S. were organised. The present study review the functioning of F.S.S. in Andhra Pradesh.

In Andhra Pradesh, F.S.S. started functioning from 1976. According to the Quarterly Progress Report of the Registrar of Co-operative Societies, A. P. fifty societies had been registered by the end of 1977-'78 of which 41 were sponsored by the commercial banks. But by the end of September, 1980, the number of societies registered increased to 67 and out of the registered societies, only 58 were functioning by the end of November, 1980.

Objectives

The main objective of the F.S.S. is to help farmers, particularly small|marginal farmers, agricultural labourers and rural artisans by providing them integrated credit i.e., credit linked with input supply and marketing. Societies provide short, medium and long term credit for agriculture and allied activities mainly for productive purposes.

They supply agricultural inputs to farmers and required raw materials, machinry appliancs etc. to cottage and small scale industrial activities, and provide custom, consumer, marketing, godown and agricultural extension services to members.

The overall review of the functioning of F.S.S. is given in the following table :

Table 1

Membership and Share Capital (District-wise)

(Rs in. lakhs)

Sl. No.	Name of the District	Total No. of F.S.S.	Total Membership	Total share capital
1	2	3	4	5
1.	Ranga Reddy	9	13997	36.46
2.	Medak	2	4122	8.53
3.	Nizamabad	2	2760	4.60
4.	Adilabad	1	1488	3.73
5.	Khammam	1	2709	1.23
6.	Mahabubnagar	2	3820	4.41
7.	Warangal	6	15082	26.75
8.	Nalgonda	4	4677	9.73
9.	Kurnool	5	7197	7.03
10.	Anantapur	5	9963	18.95
11.	Cuddapah	7	12228	19.11
12.	Chittoor	1	1660	2.62
13.	Vizianagaram	2	1719	2.77
14.	East Godavari	1	3047	2.81
15.	Krishna	2	3625	3.37
16.	Nellore	2	2773	4.24
17.	Srikakulam	2	3432	4.49
18.	Prakasham	3	4136	7.40
19.	Vishakhapatnam	1	3448	2.73
		58	101883	171.06

SOURCE : The quarterly Review of the Registrar of Co-operatives : F.S.S. Andhra Pradesh, December, 1980.

It can be seen from Table I that a large number of F.S.S. are found in Ranga Reddy district followed by Cuddapah district while some district possessed only one society each. Most of the districts possessed only two societies. With regard to membership among the districts, the highest membership is found in Warangal District and the lowest is found in Adilabad district. The total membership in the State stood at 101883 and the total share capital is about Rs. 171.06 lakh. The highest share capital is found in the societies of Ranga Reddy district and the lowest is found in the society of Khammam district. It can be observed from the table that there is lot of variation among the districts with regard to the number of F.S.S. their membership and share capital. The significant point to note is that one district had less number of F.S.S. with higher membership and other districts had large number of F.S.S. with lower membership. In the case of share capital and membership, some districts have more share capital with less membership and other districts have low share capital with large membership. The main cause for this unevenness is that a majority of the societies are established in backward areas where there is little knowledge about the benefits of F.S.S. and the existence of primary credit societies in F.S.S. areas.

Development of Credit

Nearly 55 per cent of the total loans are given for short-term, 43 per cent for medium term and only a meagre 2.32 per cent for long-term purposes. It means they are deploying more short-term credit followed by medium and long term. With regard to short-term credit disbursement, the highest percentage is deployed in Medak district (95.12) followed by Prakasham district (92.45) and the lowest percentage is deployed in Visakhapatnam district (21.64). In Khammam district, this credit was not advanced at all. A large amount of medium-term credit was deployed in East Godavari district (Rs. 17.12 lakhs) and the smallest amount was advanced in Prakasham district (Rs. 1.34 lakh). It is observed that the highest percentage of long-term loans are advanced in Chittor district (51.14) followed by Nellore district (9.71) and the lowest percentage is disbursed in Warangal district (0.57). One of the significant points to be noted is that long-term credit disbursement was not done in 9 districts. There is lot of variation among the districts with regard to the total credit deployment. In the total credit, the highest amount is disbursed in Ranga Reddy district (376.39 lakh) followed by Warangal (192.82 lakhs) and Anantapur districts (59.45). The lowest amount of credit (8.49 lakh) is deployed in Khammam district.

Non-credit Services

Besides credit facilities, these societies were expected to provide full package of services needed by the farmers such as supply of agricultural inputs technical guidance, custom services, storage facilities, marketing/processing of the agricultural produce and distribution of consumer goods etc. The following table shows the details of the non-credit services of F.S.S. in Andhra Pradesh.

Table 2

Non-Credit Services Undertaken (District-wise)

(Rs. in lakhs)

Sl. No.	Name of the District	Services Undertaken: Input Services	Custom Services	Consumer Services	Marketing Services	Total value of Services
1	2	3	4	5	6	7
1.	Ranga Reddy	37.21 (76.86)	1.80 (3.71)	9.40 (19.41)*	—	48.41 (100)
2.	Medak	11.50 (100)	—	—	—	11.50 (100)
3.	Nizamabad	—	—	—	—	—
4.	Adilabad	26.77 (100)	—	—	—	26.77 (100)
5.	Khammam	—	—	—	—	—
6.	Mahabubnagar	6.54 (100)	—	—	—	6.54 (100)
7.	Warangal	14.72 (84.50)	2.46 (14.12)	0.24 (1.37)	—	17.42 (100)
8.	Nalgonda	2.97 (84.04)	0.04 (1.10)	0.61 (16.85)	—	3.62 (100)
9.	Kurnool	14.13 (98.39)	—	0.23 (1.60)	—	14.36 (100)
10.	Anantapur	73.44 (96.31)	1.65 (2.16)	1.04 (1.36)	0.12 (0.15)	76.25 (100)
11.	Cuddapah	12.94 (78.90)	2.91 (17.74)	0.55 (3.55)	—	16.40 (100)
12.	Chittoor	0.09 (100)	—	—	—	0.09 (100)
13.	Vizianagram	3.96 (87.80)	—	0.55 (12.19)	—	4.51 (100)
14.	East Godavari	1.77 (89.94)	0.55 (2.55)	0.15 (7.61)	—	1.97 (100)
15.	Krishna	1.69 (100)	—	—	—	1.69 (100)
16.	Prakasham	4.15 (89.82)	—	0.47 (10.17)	—	4.62 (100)
17.	Nellore	10.44 (95.26)	—	0.50 (4.73)	—	10.5 (100)
18.	Srikakulam	12.44 (91.26)	0.55 (4.03)	0.64 (4.69)	—	13.63 (100)
19.	Visakhapatnam	19 (100)	—	—	—	19.00 (100)
		253.37 (91.36)	9.46 (3.41)	14.38 (5.18)	0.12 (0.04)	277.33 (100)

*Figures in brackets show the percentage.

It can be observed from Table II that out of the total value of non-credit services, input supply constitutes 91.36 per cent, consumer goods supply 5.18 per cent, custom services 2.41 per cent and marketing services 0.04 per cent. This shows that the non-credit activities of these societies were mainly confined to input supply. The F.S.S. in Nizamabad and Khammam districts have completely neglected these services. Custom services were not provided in all districts and consumer goods services were not undertaken in 8 districts. Even in the districts where these services were undertaken, they are not adequate. Marketing, which is treated as an important aspect of integrated credit, is totally neglected in 18 dis-

(Continued on page 26)

Are the migrant tribals of Bihar being exploited?

Migration of labour is a mixed blessing. It prvoides job opportunities to people for whom work is not available at home. But it can lead to their exploitation also. Usually migrant labour does the job which local labour does not do, but he is paid less than the local labour. This is almost a universal phenomenon. When migration results in permanent settling down in new areas it can lead to resentment among the local population. In cities it leads to the establishment of the slums.

DR. SACHINDRA NARAYAN

MIGRATION is a major factor in economic development and manpower planning, it has acquired special significance in the context of commercialisation of agriculture and it has major implications for urbanization, slums and social change.

Studies in migration stemmed from two theoretical sources : Culture contact theories and the Marxian analysis of colonization and alienation while the former approach is out dated, the latter is highly significant in studying the process of migration and its consequences in the capitalist mode of production. For instance colonization of tribal regions in different parts of India, specially in Bihar, has led to conflicts between the migrants and the native tribes. Large scale exploitation of the benefits of scarce resources by the migrants has resulted in conditions of relative deprivation of the tribals. The perception of such conditions by the local tribes has led to militant messianic and millenrian movements. The problem of ethnicity has assumed an important place in migration studies specially in the urban contexts. The foremost consequence of large scale migration of unskilled and semiskilled workers to the cities is the development of slums.

Flow of migration

To what states do migrants move? According to 1961 census, the major flow has been to West Bengal (specially the industrial belts in the Hooghly and Damodar Valley regions), Maharashtra (greater Bombay and Poona), Punjab (the industrial towns along the railway lines between Amritsar and Delhi), Assam (the tea plantation) Mysore (the industrial Complex around Bangalore and the gold fields at Kolar), and Madhya Pradesh (with the heavy electrical industries at Bhopal).

In terms of proportion of immigrants to total population West Bengal and Punjab with 15.7 per cent and 14.2 per cent respectively are the highest states: Assam comes next with 11.4 per cent of its population comprising migrants followed by Maharashtra with 7.3 per cent and the hill state of Himachal Pradesh with 6.6 per cent.

The growth of land alienation, the establishment of rent and moneylending that called for cash income, and the gradual increase of the tribal population as the death rate declined, led to the emergence by the second half of the nineteenth century of a pool of surplus agricultural labourers.

In the middle of the nineteenth century the British were looking for a labour force they could recruit to work on their plantations in Assam and Bengal as tea pickers. The tribals of Chotanagpur were willing recruits as they were in need of work; they were accustomed to hard labour, acclimated to the hill areas; and the distances, though substantial, could be traversed by rail, road and steamer. British recruitment in Chotanagpur region began in the middle of the century, chiefly among the Santhals and the Mundas. The Santhals emigrated from Santhal Parganas and Manbhum and the Mundas from Ranchi and Hazaribagh.

Demographic effects

If we take 1921 as the peak year of emigration, when slightly under a million tribals were living in Bengal, Assam and other parts of India, and when the tribal population of Chotanagpur was approximately three million, we can estimate that nearly a third of the tribal population had emigrated or to put the magnitude another way, had there been no out-migration of tribals, the tribal population of Chotanagpur and Santhal Parganas in 1971, taking into account natural population increases, would have been about six million instead of four and a half.

Actually, it is likely that the long-term demographic effects could have been even greater than the numbers indicate, since the migrants were young tribals of child bearing age whose fertility would most probably have been higher than of those who did not migrate.

There is no exclusive study on the out migration of the tribals of Chotanagpur. However the passing reference on the subject has been made in some recent studies. Sachchidananda in 'Changing Munda' (1980) has mentioned that "since early 1970's there is a seasonal migration among the Mundas of Khunti area to Punjab where they work as agricultural labourers in the field of rich peasants. They are recruited and transported by middlemen styled as 'Sardars' on commission from the Munda labourers and their employers. The agricultural labourer from Chotanagpur is a cheaper substitute to his counterpart in Punjab. He is paid Rs. 60 p.m. along with meal, clothing and living room. He is supposed to serve his Master for a period of six months which is the period of contract" (p. 150).

This has been corroborated by Manjit Singh and K. Gopal Iyer in their paper Migrant Labour for Green revolution (voluntary Action, Vol. 24, No. 1) wherein they mention that "the early recruitment of tribals started towards the close of the sixties when some Punjabi farmers having links with Ranchi brought few tribals for personal work".

Munda, Santhal, Oraon, Ho etc. are the major tribes of Bihar. Apart from these there are some minor tribes also like Birhos, Malpaharaia, Sauria Pahadia, Kumarbhag etc. The bulk of the outmigrants permanent or seasonal are from the major tribes for the reasons mentioned above.

Migration of tribals of Bihar to tea plantation of Assam, rural areas of Haryana, Punjab etc., industrial complex and urban areas of West Bengal Bihar and to other states poses several specific problems for anthropoligical investigations. Their problem of adjustment are different from those of non-tribal labourers and peasants. Both the problem of inter tribal relations and the tribal and non-tribal relations in such cities need to be studied besides their changing economic and property relations and family and religious life. N. C. Chaudhary in his paper 'A Study on Tribal Migration (1963) shows that tribes move in groups maintaining their ethnic identity.

Seasonal migration

Seasoal migration occupies a very important place in migration studies, but unfortunately it is the most neglected area. Since the census data are not useful in this regard, primary studies are needed to unravel the different dimensions of the problem, including working conditions, the role of middlemen, nature of exploitation and an assessment of relevant legislations. Seasonal migration has acquired a singular importance in the context of commercial crops. There are other operations which need seasonal labour such as bamboo cutting, felling of trees, construction of road, brick work and other areas like desilting of tanks and canals and building tanks, bridges and dams. M.S.A. Rao (1981) has mentioned in his paper that contrary to the popular impression, seasonal migration is work specific and a certain group specialises in particular job.

Seasonality is relative to economic and social conditions of migrants at the place of origin and of destination. Seasonal migrants tend to be exploited by the middleman and hence the process of recruitment and different patterns of organisation of work needs to be studied in detail. Migration is also considered as an investment in human capital involving cost-benefit analysis at different levels.

Anthropological approach to migration has been built up over a period of years in bits and pieces since Marxian culture-contact and Revenstine's (1885) theories.

Any study of migration should consider the historical development of the region, the wider economic and political conditions which regulate and condition the nature of employment opportunities, secondly economic and social conditions at the place of origin need to be examined in order to understand why people move or do not move. At the individual level we have to consider not only the level of skills and family circumstances but the whole prices of socialization and personality factors. It is important to realise that economic factors provide only the necessary conditions of migration, the sufficient conditions are the motivation to move, presence of resource net works and access to information flows. The latter make migration selection in terms of age, sex, marital status and the phase of development of the domestic group.

What happens to the migrants at the place of destination, their problem and process of settlement, employment, success and failure and their social organisation are not entirely unrelated to their contacts with the place of origin. Hence the continuing interaction process between the place of origin and of destination is an essential aspect of migration studies.

Madhya Pradesh Annual Plan 1983-84

The Annual Plan outlay of Madhya Pradesh during 1983-84 will be of the order of Rs. 855 crores, a step-up of Rs. 130 crores over the Annual Plan outlay for the current year.

This was decided when the Chief Minister, Shri Arjun Singh met the Union Minister of Planning & Deputy Chairman, Planning Commission, Shri S.B. Chavan, in New Delhi recently.

Shri Chavan noted that the financial position of the State had improved. The plant load factor of thermal power stations had also improved. However, reviewing the performance of the current Annual Plan, Shri Chavan advised the State to prevent slippages in the power and irrigation sectors. The externally aided projects were also slipping and needed prompt remedial action.

Involving the weaker sections in development

The main task is to arouse the interest of the people in their own welfare, to re-inforce their faith in work ethics: i.e. their lot is not going to change unless they themselves make an effort. If they are involved in identifying their problems and finding their solutions, they may gain faith in development. Care should be taken to see that a few well-off S.C. and S.T families do not monopolise the concessions given by state at the cost of their less well-off brethren.

R. P. SINGH

A two-day seminar on the development of scheduled castes and scheuled tribes in Manipur was organised by the Indian Institute of Public Administration, Manipur branch to highlight the problem and prospects of the development of weaker sections in the state. Following are the major recommendations of the seminar.

Agriculture and allied fields

Shifting of jhum farmers in a phased manner to other types of farming may be examined for different areas. A programme of social education should be taken up to convince the people about the benefits of the new system of farming. Regrouping and rehabilitation of villages may be taken up on a watershed basis wherever necessary and feasible. Some methods should be worked out to enable the farmers to take full advantage of institutional credit.

Environment

An environmental plan should be formulated with a view to maintaining the ecological balance and also choking the soil erosion and deforestation.

Energy

Micro-hydel projects should be undertaken wherever possible with a view to minimise the high cost of generation. More bio-gas plants should be established. Survey with regard to feasibility of wind mills and solar energy units should be undertaken.

Credit facilities

For proper coverage of the economically and socially backward sections of the society, credit support of the banks should be planned on an "area basis". More banks should be opened in the hill areas to provide the capital base for development of various sectors of the economy.

Education

The need for rationalization of schols and establishment of well-equipped schools is emphasised. Suitable crafts should be introduced for vocational education. Teaching upto the primary school stage should be done through the medium of the mother tongue to the extent possible. Preparation of text books in all the recognised dialects should be expedited.

Science and technology

It is recommended that a State Science and Technology Board should be established to prepare a comrehensive science and technology plan for the entire state; oversee the diffusion of new, appropriate and improved technology in various sectors of development; and undertake research programmes oriented towards the greater utilization of natual resources.

Reservation policy

The Seminar did not recommend a departure from the philosophy underlying the scheme of reservations for the scheduled castes and the Scheduled tribes. But it is worth noting that some families of the scheduled castes and scheduled tribes who have already got the benefit, are likely to continue to monopolize these facilities at the expense of the weaker families belonging to these categories. It is therefore necessary to work out specific measures so that the scheduled castes and scheduled tribes families who have come up to a certain economic and educational level and can take care of themselves may be eased off in favour of the weaker families.

District level plan

In order to involve the people in a greater degree it is considered that district level plans should be formulated and implemented at the district level. For this purpose it would be necessary to specify clearly the state level schemes and the district level

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More than 5000 industrial units sanctioned in Uttar Pradesh

The Uttar Pradesh Financial Corporation has been playing a vital role in the industrial uplift of the 39 *background districts of the State. The not-so-well developed districts registered an* 80 *per cent increase in fixed and working capital and the employment rose by over* 35.5 *per cent during the last decade. The UPFC made strides during the last* 25 *years. In* 1956 *the Corporation sanctioned Rs.* 20.62 *lakhs to* 26 *small scale industries. In* 1970, 241 *units received Rs.*4 *crores and in* 1980, 5,000 *units got Rs.* 82 *crores.*

A. JOSHI AND VIJAY K. GOEL

THE Uttar Pradesh Financial Corporation (UPFC) was established by the State Government in 1954 and has been one of the prominent financial institutions promoting industrial activity. In 39, out of 56 districts of the State, declared backward, the UPFC has announced concessional terms like lower rates of investment, longer grace, and repayment periods, reduced marginal and lower equity-debt ratio, 50 per cent reduction in the commitment levy and other processing and legal charges and payment of guarantee commission by the corporation in respect of the small scale industrial units.

The phenomenal growth of the Corporation is evident from the fact that as against Rs. 20.62 lakhs sanctioned in 1956 to 26 small scale industries, an amount of Rs. 4 crores had been sanctioned to 241 units in 1970. From 1970 onwards with greater emphasis laid on industrial development the activities of the UPFC also increased tremendously with the result that by 1980, Rs. 82 crores had been sanctioned to 5,000 units.

Looking at the efforts of the UPFC in the promotion of backward areas in the State we find that the Corporation had sanctioned a loan of Rs. 279.96 lakhs to 133 units in the small scale sector of the backward areas in 1971-72. This was around 22 per cent of the total loan sanctioned to the small scale sector. By 1979-80 however the UPFC had sanctioned Rs. 4,344.70 lakhs to 2,515 small scale units in the backward districts and the share of backward districts had shot upto 53 per cent. This clearly indicates the shift in the emphasis given by the UPFC in the promotion of backward area development as the share of sanction going to the developed districts fell from 78 per cent in 1971-72 to around 47 per cent by 1979-80.

Sanctions made to the other than small scale sector rose from Rs. 189 lakhs in 1971-72 to Rs. 1.215.26 lakhs in 1979-80 in the backward districts, covering 106 units as against 26 units in the year 1971-72. In per centage terms the share of sanction going to the backward districts rose from around 16 per cent to around 35 per cent between the two points of time mentioned above. Here also we find a healthy shift in the emphasis laid down by the Corporation on backward area development. This shift, however, was less than that witnessed in the small scale sector since the share of the non-backward districts even in 1979-80 stood at 65 per cent. This is primarily because it has not been very easy to lure the large scale entrepreneurs in setting up units in the backward districts of the State.

As against the sanction of Rs. 280 lakhs in 1971-72 in the small scale units of the backward districts the disbursement was Rs. 108.58 lakhs which was around 21 per cent of the total disbursement in the State. However, by 1979-80 disbursement in this sector of the backward areas had reached Rs. 2,292.67 lakhs and the backward areas had bagged nearly 49 per cent of the total sanction in the State.

In case of disbursement to other than small scale sector the non-backward districts claimed around 70 per cent of the loans disbursed in 1979-80 as against around 86 per cent in 1971-72.

However, it should be pointed out that the entrepreneurs in the backward areas have shown lesser enthusiasm and enterprise than their counterparts in the non-backward areas since the disbursement as a percentage of effective sanction was 52.77 in the backward districts as against 62.75 for the non-backward districts in 1979-80. Even in 1971-72 the backward districts had lagged behind the non-backward districts (38.78 per cent as against 41.12 per cent).

We will now try to link the performance of the UPFC with the change in the level of industrial activity in the State. It should, at this juncture, be pointed out that the entire credit for the industrial development of the State does not go to the UPFC alone for there has been the government as well as other institutions which have been playing a vital role towards the industrial development in the State. Yet we can certainly say that the UPFC has also been a contributor to the industrial prosperity of the State to at least a certain degree. The number of registered factories in the State rose from 3,673 in 1970 to 5,024 in 1979 showing an increase of around 36.75 per cent. Those in the backward areas rose from 762 to 1,044 during the same period which is an increase of 37 per cent. It can, therefore, be seen that increase in the industrial activity in the backward district has kept pace with the State as a whole as far as the expansion of the industry by way of additional units is concerned.

Looking at the levels of industrial activity on the basis of employment we find that the total work force employed in the registered factories in UP was 282,160 thereby registering an increase of just over 26 per cent. The employment during this period rose by over 35.5 per cent in the backward districts of Uttar Pradesh whereas in the non-backward districts the increase was only around 23.5 per cent.

The value of production in the registered factories similarly increased from Rs. 709.91 crores to Rs. 2,080.93 crores between 1970 and 1979. This increase works out to nearly 200 per cent (193.12 per cent). The backward districts showed an increase in their production of over 150 per cent. While in the non-backward areas it was almost 202 per cent.

It is therefore of interest to note that while employment went up by 35 per cent in the backward areas, production went up one and a half times. On the other hand, with only a 23 per cent increase in employment the production doubled in the non-backward-districts. This could, however, have been as a result of more labour intensive units being set up in the backward districts as compared to the non-backward ones.

The increase in industrial activity is also reflected in the fixed and working capital which rose from Rs. 542.43 crores in 1970 to Rs. 1,368.60 crores in 1979 (152 per cent). In the backward districts this increase worked out to around 80 per cent which again adds substance to the belief that the units established in the backward districts during this period were less capital intensive.

It can therefore be said that the State has witnessed expansion as well as diversification of its industrial sector between 1971 and 1980 whereby the State as well as its backward districts have benefitted industrially and the UPFC has played a positive role towards this end. It is hoped that the Uttar Pradesh Financial Corporation will work with even greater enthusiasm and zeal so as to make this Productivity Year a success for the State. □

(Continued from page 24)

schemes, and to allocate funds for district level plans to the districts on a rational basis, and to make the necessary provisions in the budget accordingly, so that the districts may know what they have to do and what they can do and what resources are available right from the beginning of the year. The District Councils should be fully involved in the formulation and implementation of the district plans.

Village Level Plans

Our planning has been comparatively successful in the highly organised sector, and much less so in the highly decentralised people's sector which has a direct bearing on the poverty and employment of the people. It is not possible to feed and clothe and maintain 685 million people except by the efforts of the people themselves. The problem is now to arouse the interest of the people and harness their energies for this gigantic task. The problem in this State is a part of the bigger problem. It is considered that the involvement of the people can be secured only when they participate in the process of identifying the problems, assessing the resource, selecting the priorities and preparing and implementing the plans at the village level.

Implementation

Apart from all that has been mentioned above, proper implementation of the plans and scheme is a matter of the most critical importance. The implementing agencies should, at all levels, keep in view the larger objectives of the plans and schemes, and be result and target oriented, and achievement should be judged only by the yardstick of their ultimate impact on the people. A work ethic and a lively sense of social and ethical values will have to be created. In this, the role of the political authority and the administrators could be of crucial importance.

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district out of a total of 19 districts. Anantapur district is standing first with regard to non-credit Services followed by Ranga Reddy and Adilabad districts.

From the above analysis, it is clear that though these societies were established with an objective of providing integrated credit i.e., credit linked to input supply and marketing, the F.S.S. under review predominantly concentrated only on credit disbursement and very little attention has been paid to non-credit services. Again within credit disbursement, short-term loans occupied a predominant position followed by medium-term loans. Long-term loans were neglected in almost all societies. It means for long-term loans, the members are depending on other sources. Moreover, the coverage of rural artisans and agriculural labourers seem to be very unsatisfactory. The non-credit services of these societies reveal that custom services, consumer goods supply were insignificant in the integrated services activities. Marketing of agriculture produce was completely neglected by all these societies except the F.S.S. in Anantapur district. The study shows that there is a gap between the promise and performance of these societies. The Farmers' Services Societies were started with the main emphasis on Service activities rather than credit. But this motto seems to have been completely forgotten by these societies. If they continue to function on the same line, there would not be any fundamental difference between these Socieities and the Primary Agriculture Credit (PACS) Societies except in their nomenclature. Hence, there is an urgent need for directing the activities of these societies towards the provision of various services for justifying their name. □

Where even incentives don't attract entrepreneurs ?

The Planning Commission declared 247 districts as backward. A number of incentives and concessions have been offered to attract entrepreneurs establish industries in these areas. The industrial licensing policy also aims at directing developmental efforts and resources in these areas. Despite the incentives, lack of coordination among various departments, and agencies, lack of infrastructural facilities like transport, communication and power have weaned away many young technocrats from starting small units in backward regions.

DR. R. R. AZAD

DEVELOPMENT of industrially backward areas has been one of the important national objectives. Since 1968, special efforts have been made to find effective methods of stimulating development of industrially backward areas. In November, 1968, Government appointed two Working Groups popularly known as 'Pande Committee' and the 'Wanchoo Committee' to go into the problem of backward areas. While the Pande Committee laid down the criteria for the identification of backward areas|districts, the Wanchoo Committee suggested several fiscal and financial incentives. The accelerated development of industrially backward areas had been assigned a high priority in the Fifth Five Year Plan. The Planning Commission declared 247 districts as backward and they now get various incentives for industrial development.

As per the Wanchoo Committee recommendations the Government of India have been announcing a number of concessions and facilities for industries established in selected backward districts|areas from time to time. To accelerate the pace of industrialisation in the 247 backward areas Industrial Development Bank of India, Industrial Finance Corporation of India and Industrial Credit and Investment Corporation of India have extended financial assistance on concessional terms to all new and existing industrial projects for expansion schemes. The concessions include a lower rate of interest of 9.5 per cent per annum, a reduced commitment charge of 9.5 per cent (which could be waived in exceptional cases), lower under-writing commission of 1.25 per cent and 0.75 per cent for shares and debentures respectively, initial moratorium period upto 5 years, longer amortisation period of 15 to 20 years and participation in the risk capital on a selective basis. Moreover, these institutions also adopt a flexible approach with regard to promotor's contribution, margin requirements, rescheduling of repayments during the currency of the loan etc. on merits of specific cases. The IDBI, which provides refinance to SFC's and Commercial banks, charges a special rate of interest of 6.5 per cent with the primary lender's rate being subject to a ceiling of 9.5 per cent. Direct loan assistance up to Rs. 2 crores and underwriting assistance up to Rs. 1 crore by the three insitutions are provided on concessional terms to new projects as well as to the expansion, diversification, renovation, and rehabilitation programmes of the existing units.

Out of the 247 backward districts 101 districts have been selected for central investment subsidy. At the inception of the scheme in 1971, it was decided to give only one incentive in the form of an outright grant|subsidy amounting to 1|10th of the fixed capital investment in new or expansion projects, provided the total fixed capital investment requirement did not exceed Rs. 5 lakhs. Assistance to projects with capital cost exceeding Rs. 50 lakhs was to be considered on merits. Subsequently, for units coming up after March 1, 1973 the subsidy was increased to 15 per cent of the total fixed capital investment subject to a maximum of Rs. 15 lakhs, provided the total capital investment did not exceed Rs. 1 crore. Cases involving fixed investment of more than Rs. 1 crore were to be considered on merits.

New industrial projects, including hotels, proposed to be located in specified backward districts|areas, are allowed a deduction of 20 per cent of the profits for computation of assurable income with effect from April 1974. The deductions are available for industrial projects, including hotels, which employ 10 or more workers, if they use power and 20 or more workers if power is not used.

Small scale industrial units including ancillaries are eligible to procure machinery on hire-purchase basis from the National Small Industries Corporation (NSIC) Limited. The NSIC Ltd., has liberalised its terms and conditions for supplying machinery on hire-purchase basis to small scale industries located in backward areas which qualify for investment subsidy. According to the liberalised terms w.e.f. October 1975 the earnest money payable by technocrats and entrepreneurs from declared backward areas is 10 per cent as against 15 per cent in other cases. The rate of interest is 11 per cent per annum in respect of technocrats and entrepreneurs coming from backward areas and 12-1|2 per cent in the cases of others. These concessional rates are available to units having a total investment in plant and machinery upto Rs. 2 lakhs. A rebate of 2 per cent is also allowed on prompt payment.

Under the import policy for the current year, in the case of industrial units set up in backward areas or by graduates|diploma holders in professional subjects or by ex-servicemen|persons belonging to Scheduled Castes|Scheduled Tribes, the maximum value of licence shall be Rs. 5 lakhs in respect of new proposed small scale units instead of Rs. 3 lakhs previously given. They will also be eligible for professional treatment in the matter of canalised items.

As regards the union transport subsidy suggested by the Wanchoo Committee, the Central Government evolved a scheme under which 50 per cent of the freight charges on transport of raw materials and finished products of all industrial units set up in States| Union Territories of Jammu and Kashmir, Himachal Pradesh, Hilly areas of U.P., Meghalaya, Nagaland, Manipur, Tripura, Arunachal Pradesh, Mizoram and Lakshadeep are subsidised by the Union Government.

In addition to the incentives offered by the Central Government and all-India financial institutions, the State Governments also devised various incentives and facilities for attracting the establishment of industries in backward areas. The incentives are offered by the State Governments either directly or indirectly through State level institutions such as, State Finance Corporations, State Industrial Development Corporations and Small Industries Development Corporations. These incentives vary from one State to another, but generally include land, power and water at concessional rates, sales tax refund scheme|sales tax loan, exemption from Octroi, preparation and subsidising feasibility studies, supply of scarce raw materials, price preference, financial assistance at concessional terms, etc.

The avowed objective of licensing was to direct developmental efforts and resources in desired areas. In effect, the licensing policy as an instrument for regional dispersal has almost been a failure. It could refuse location at an area but had no positive influence in inducing location at desired points.. Operational agencies, such as financial institutions, had no voice in deciding the location. In the absence of a predetermined industry-wise locational preference to subserve the objective of industrial dispersal, the licensing authority changed locations as required by entrepreneurs.

The Dutta Committee made pointed references to this Lacuna. The labours of the "Wanchoo Committee" and the consequent identification of backward districts in 1969, should have removed this shortcoming. However, an examination of the industrial licences (IL) issued since then does not indicate any perceptible change in the proportion of licences in favour of backward regions. Dr. Ashok Mitra, former Census Commissioner, in his study covering the period 1953—61, found that more than 4|5th of the licences issued had gone to the eight States and two Union Territories now identified as developed by the 'Pande Committee'. Four of these States were Maharashtra (27.3 per cent), West Bengal (18.7 per cent), Tamil Nadu (10.0 per cent) and Gujarat (7.6 per cent). Together these four States accounted for nearly 2|3rd of the total licences issued. The 'Dutta Committee' which covered the years 1955—66, observed that 77.7 per cent of the total number of licences had gone to these eight States and two Union Territories the position remained unchanged during the last one decade. Gujarat, Maharashtra, Tamil Nadu, West Bengal and U.P. shared more than 50 per cent of the licences during 1971—80. Maharashtra topped the list followed by Gujarat, Tamil Nadu, U.P. and West Bengal. Percentage of issuance of ILs to Maharashtra was almost equal to the total ILs issued to the remaining States| Union Territories. Maharashtra, for example, secured 30.4 per cent of the total number of ILs issued during 1979 in the country while the percentage of remaining States|Union Territories only 32.4. Similarly, the percentage was 28.7 for Maharashtra while that of the remaining States|UTs was 31.2 only. In the matter of ILs issued also, the aforesaid five States shared more than 54 per cent of the total number of ILs issued, during 1971-80. Maharashtra again topped in this regard followed by Gujarat, U.P., West Bengal and Tamil Nadu.

Regarding the development of backward areas, there has not been considerable change in the proportion of LIs and ILs issued. Five developed States shared increasingly large portions of LIs issued to the backward areas. The percentage of LIs issued to the backward areas of these five States rose from 32.7 in 1971 to 51.2 in 1973 and 55 per cent in 1977. Similarly, the percentage of ILs issued to the backward regions of the five States has shown fluctuations both in positive and negative directions. For example, the percentage of the five States stood at 50 in 1971 and 61.5 in 1972. It came down to 58.2 per cent in 1978 and 49.8 per cent in 1980.

Out of these five States Maharashtra was on the top, both in case of percentage of LIs and ILs issued, followed by Tamil Nadu, West Bengal, Gujarat and U.P. A detailed study of State-wise ILs|LIs issued also reveals that certain backward States|UTs could not either get any or could get only negligible number of ILs|LIs, the reason being that the licencsees there have not been able to implement their licenced projects for want of development of infrastructure, technically trained personnel, and higher cost of their products. That is why even with an increase in the number of LIs|ILs issued to the backward areas, the progress has been far from satisfactory. On the other hand because of the resourcefulness of the licensees in the five States, not only backward regions of these States could get lion share but could also implement them. The impact of concessional finance on the development of backward area is marginal. Its cost on the other hand appears to be quite heavy. According to an estimate, "an additional cost of about Rs. 190 crores has been incurred to attract an investment of less than Rs. 12

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Breast Feeding best for the babies

Breast feeding leads to better health. No baby food invented as yet can replace the mother's milk or its suitability in terms of a child's nutritional, physiological and emotional needs. The contraceptive effect or breast feeding is also noteworthy since it helps spacing of the pregnancies so essential for better survival of the little ones.

DR. SANTOSH K. BHARGAVA

"Breast feeding with love leads to better health". These words though written several centuries ago, remain till today unchallenged and uncontradicted in the scientific world. Recent information on breast milk, which has been a subject of immense interest and medical research in recent times, has confirmed almost all the facts and beliefs known for centuries about mother's milk—that is, it protects an infant and helps him grow opimally both physically and emotionally.

Even so, no other child health promotional activity has been threatened much in recent times as the practice of breast feeding. Why is this so, is the question that is causing tremendous concern amongst the Governments, Sociologists and all those concerned with child health and welfare.

It is not uncommon to find mothers, both rural and urban, with a firm belief that infants fed on formula feeding (reconstituted milk from commercially available tinned milk or other sources of animal milk) grow to be bonnier and healthier. Coupled with this belief is often their feeling that it is difficult to introduce semi-solids, solids and top milk to an infant if he is not accustomed to a bottle or a commercially available infant food in earlier weeks of life. In many instances notions and pretexts such as disfigurement, illness in the mother or the infant, ignorance of a treating physician or a working mother result in the introduction of other methods of feeding.

There are several reasons for such an unfortunate state of understanding of mother craft. The most important of these is the publicity blitz aimed at promotion of commercially available infant foods and the feeding bottle to which the unsuspecting mothers are constantly subjected to. Some of the examples of such sales promotion are "Baby milk food is as gentle as your love", "Now your baby has all the nutrition he needs". On "breast feeding" a feeding bottle manufacturer advertises "for a mother to feed her baby like this every four hours just isn't convenient". In contrast to such aggresive propaganda, lack of information on breast feeding or its promotion through the mass media and organised compaign actively contribute to false notions and beliefs.

The question is, are these statements true? The answer is a firm "No". There is no food which has been invented to replace the mother's love or its suitability in terms of a child's physiological, nutritional and emotional needs. Nature endowed the mammals with the mammary gland with the most important function of nurturing its off-spring with its own milk. This milk is so constituted that it suits the needs in an optimum way. This is evident from the comparison of milk from human and various animal sources.

It is amply clear that each animal produces milk which is best suited for its survival and growth and is vastly different from human milk. Breast milk is richer in carbohydrates, qualitatively superior in proteins and minerals such as iron and vitamins and its low in solute load. It is thus, easily digestable by infants whether of low birth weight normal weight or premature. On the other hand, milk from animal sources such as from buffaloes is rich in fats and solute load and is unsuitable for infants in the first few weeks. It is almost always diluted by population at large. The commercially available infant food is not pure milk from an animal source but is constituted by addition to cow's milk whey of oils such as corn, soy and coconut and has to be fortified with vitamins to make it suitable for feeding.

It is thus, evident that at least in terms of composition, the breast milk is the most suitable milk amongst all the available milk for infants. It does not need money for purchase, fuel for warming, water for dilution and reconstitution or utensils for preparation of feeds and bottles for feeding. The powdered milk has to be reconstituted with water obtained usually from unprotected sources such as pond, hand pump etc. which makes it potentially dangerous by causing infections.

It is wrong to say that babies need to be introduced in the first four months to supplementary or total feeding with top milk (tin, buffalo etc.) or other infant food to obtain optimum health and growth or getting them used for later introduction of articles of diet. Recent studies from Ludhiana and Delhi have confirmed that infants fed exclusively on breast milk up to 4—6 months of age without supplementation with top milk or cereals had comparable growth. Gopalan, a leading nutritionist of the country, suggests that in poor communities living under poor hygenic conditions, the theoretical benefits of early supplements (i.e. before six months) may be more than off-set by the earlier onset of diarrhoeal episodes and pleads that it would be prudent to advise mothers particularly of weeker sections of the society to introduce supplements only after the age of six months.

It is now a well established fact that infants who are not breast fed have higher morality rate, suffer from significantly higher morbidity (diarrhoea, respiratory and other infections), are hospitalized 10 times more often and if they survive these hazards, suffer from moderate to severe malnutrition. The menance of diarrhoea a potentially lethal disease, is commonly seen in such infants and is almost 15—20 times more common than in infants fed on breast milk.

The protection of breast fed infants from aforesaid hazards occurs from the now well established scientific fact that the breast milk has highly anti-infective properties. Colostrum-the thick yellow milk which is produced at the beginning of lactation is highly rich in immunoglobulines which form a major defence mechanism of the body.

Apart from offering such advantages to infants as the suitability of milk better survival and optimal physical and emotional growth, breast feeding offers several benefits to the mother herself. It prevents cracked nipples and engorged breasts during lactation and to a certain extent protects the mother from breast cancer in her later life. The mother gains several kilograms of body weight during the pregnancy. This gain results from deposition of fat which serves later as a source of energy for milk production. It is known that if the infant is breast fed, 40 gm. of this fat is utilised almost every day which results in a natural fall of mother's body weight. This excludes the necessity of going on a diet or visiting health clinics etc.

The other notable advantage is the contraceptive effect of breast feeding. This promotes normal martial activity and spacing of preganancies so essential for better survival of infants.

On an emotional level, breast feeding not only enhances the bond between the mother and her child put also offers a highly satisfying experience to the mother.

Since the capacity for producing of breast milk is limited to approximately 700 ml. of milk per day, it becomes necessary to introduce supplementary foods in the form of semi-solids and top milk after the age of 4—6 months. But the breast feeding should be continued as long as the mother produces sufficient milk and supplementary foods can be added to the infants diet gradually. It is however, extremely important to remember that where as it may appear easier to offer milk by a feeding bottle, in practice, it is cumbersome and demands knowledge and skill. Infants can be fed milk as easily with a cup or katori and sokids with spoon after age of 6 months. Bottle feeds used without the knowledge of hygiene and reconstitution of milk are more often hazardous than advantageous for the young infants.

One of the common practices and which needs to be mentioned and condemened is the introduction of prelacteal feeds (feeding before the onset of lactation of mother's milk) with honey, janam ghutti etc. These offer no advantage and predispose can be and should be offered at the earliest after birth. Some pediatricians even recommend offering the breast to the infants right in the birth rooms. An early introduction to the breast feeding encourages early establishment of milk flow and prevents occurance of problems in the new born infants, such as jaundice and potentially dangerous diseases of gastro-intestinal tract.

While there is absolutely no contra-indication to breast feeding, certain maternal or infant diseases may require temporary cessation or discontinuation of breast milk. However, discontinuation of breast milk should only be done under the advise of a competent doctor familiar with the problems of children.

The key to successful breast feeding begins in the care of breast and nipples during the prenatal period. A relaxed mother committed to feeding her infant with breast is all that is necessary for successful lactation.

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crore to backward areas. Licensing has not always helped in deciding the location of industrial units for the development of backward areas. In a number of cases the selection of the projects have been found to be capital intensive. Resource based industries like sugar, cement, paper would have come up in the backward areas irrespective of the concessional finance. A time-bound programme to develop infrastructure including power, transport and communication facilities, is essential. Since this programme is a costly one, a selective approach on the basis of growth potential should be adopted. Further, vocational training to the staff, warehousing, trading and marketing services and research and extension assistance, should be improved. Industrial estates providing all facilities to the entrepreneurs at concessional rates should be developed in the proximity of district head-quarters where workers' housing, medical, education, and many other facilities are available. Housing schemes for the rural poor on the lines of Kerala Government will not only provide an outlet for employment to the rural poor but will also help creat a market for the products manufactured by rural industries. Finally, licensing to be effective in the development of backward areas should be tied with the provisions of credit facilities and technical services.

The co-ordination between licensing authorities, Planning Commission financial institutions and other instruments of industrial development is an important pre-requisite. ☐

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Books

Coersion in family planning

Population Policy and Compulsions in Family Planning, by Prof. Vasant P. Pethe, Continental Prakashan, Vijayanagar Colony, Poona 30, India, pp. 70 plus 188, Price Rs. 45, 1981.

This book by Professor Pethe, well-known demographer economist and social scientist, deals with the population problem, not merely as one of controlling numbers as usually done, but as an aspect of rapid economic development and basic social transformation.

The book contains two major parts. The 70-page thought-provoking Preface, written in a Shavian manner, effectively argues that the Western approach, neo-Malthusian philosophy (of over-population being the cause of poverty) and urban-elitist biases have distorted the true perception of the population problem, direction of research, policy perspectives and programme implementation. The climax of this distortion is to be found in the advocacy of compulsory family planning as the only effective way to control the population explosion. The second part of the book studies in depth the controversy about voluntarism versus compulsion in family planning, taking into account the economic, social, political, ethical and cultural aspects of the problem.

Dr. Pethe, though a crusader against coercion and its merciless critics, nevertheless emphasises that population growth needs to be controlled by family welfare measures (pp. 43-48). He argues that once we eschew compulsion, creating motivation for familly planning assumes central importance. To create motivation, Dr. Pethe suggests an action-programme (Chapter 9) which is based on a synergic linkage between population and development goals. This package includes : (1) reduction in infant mortality, (2) employment guarantee, (3) social security, (4) equity in distribution, (5) rapid modernisation of production processes, (6) generating aspirations for a prosperous wordly life, (7) female literacy and education, etc.,

With a view to vigorously implementing the action programme-package within the present socio-political framework, Dr. Pethe has suggested some resilient institutional arrangements, some of which are entirely innovative. These are : (1) Commission on Population, Resources and Technology, (2) Indian Council for Research on Population and Social Transformation, (3) Intelligence Service in Population Information, Statistics and Evaluation, (4) Multi-Disciplinary Groups for Population Research in Universities, (5) Ministry of Population, (6) Prime-Ministerial level Committee for Population and Development Policy Integrations, (7) Indian Population Service as an arm of the IAS, and (8) Federation of Voluntary Organizations. (Preface : pp. 53-63).

There is no doubt that the book, especially the preface, gives refreshingly novel and original perspectives to understand the true nature of the population problem in Less Developed Countries including India. It is the first book-length reflective and interdisciplinary treatise on the most sensitive issue of coercion versus voluntarism in family planning vis-a-vis social transformation, ever attempted, at such scholarly and philosophical level, in India or abroad. As such, it represents a distinct landmark in the literature on population problem and policy. The book needs to be thoughtfully studied by the intellectuals, policy-makers, donor-agencies and leaders in all walks of life. I would suggest that Prof. Pethe, in the next edition, should deal more extensively with practical and motivational problems, faced by field workers. It is heartening to note that this book is being used as major text and reference work in academic institutions, such as for example the Trinity College at Washington D. C. in its course on Population Problems. The value of the book is enhanced because of the select and latest bibliography and original texts of Government documents on population policy.

Dr. A. G. Sathe

Problems of Command Areas

Sone Command Area—Problems and prospects by M.P. Pandey and Ann Muthana, Naya Prakash : P-87 price Rs. 30.

Irrigation projects were taken up to increase productivity of land per unit of area. But it was found that even after reasonable lags, the actual productivity was much less than the envisaged productivity. It was, therefore, felt necessary that individual researchers should probe into the matter and find out the principal factors leading to lower than optimum productivity in the command areas. Such investigations have necessarily to take into account the related socio-economic factors which result in poor performance and recommend measures for improving the system. The authors in the above study have made an attempt to collect information on prevailing socio-economic conditions in the Sone Command Area (Bihar) particularly highlighting the institutional factors that were facilitating or retarding the development of agriculture in the area.

They have selected four villages as purposive samples for collection of data. The first village is a tailend village where water for land is an uncertain factor, getting no irrigation during water shortage and over irrigation to the extent of damaging the crops at the time of excess supply of water. The second village selected falls in the category of villages which did not have rrigation facilities till the time the study was undertaken but were likely get irrigation with remodelling of the system. The third village Govindpur, selected from the list of village supplied by the authorities as getting canal irrigation turned out to be the village not getting irrigation water from the canal system at all. The authors observe, "the alignment of the canal vis-a-vis the situation of the village was such that water could not flow into the canal." Lastly a village was selected which was served well by canal irrigation. The authors collected the information in specially drawn up household schedules a copy of which they claim to have given in one of the appendices (p. 10 last paragraph). But the copy of the schedule and the appendices are conspicuous by their absence in the book.

A very delicate question that is quite often directed at the policy makers and researchers is who gets maximum benefit from irrigation. Even judging by the physical proportion of the area irrigated, the authors find that poor peasantry are at very disadvantageous position. Only about 58 per cent of their sown area is irrigated against the average of nearly 67 per cent. But what is more relevant is not the irrigation from all resources but from the canal system. The authors have only one purposively selected village (Bhanas) to throw up data in this regard. Here, the poor peasantry is slightly in a disadvantagious position. Unfortunately, this data cannot scientifically indicate anything for the command area as a whole. Analysis of croping pattern, some inputs use and output per acre, are useful. But data on cost of cultivation crops by different categories of farmers would have revealed a lot having significance from the policy point of view. Table 23, providing information on canal irrigation difficulties indicate that a restructured questionaire or even a different format of the table would have provided better information. However, the study indicates the direction in which researches in the command area are to be taken up in future.

—**D. Tripathy**

Identifying Industrial Sickness

Industrial sickness : Identification and Rehabilitation; by S. N. Bidani and P. K. Mitra, Vision Books, New Delhi, pp. 189; Price Rs. 95|—

Both the authors of the book under review are mechanical engineers with post-graduate diplomas in industrial management and business administration. As such their analysis of what contributes and constitutes industrial sickness serves serious attention.

They proceed on the analogy of industry being conceived in totality and compare it to a human body. Just as a general medical practitioner studies the human anatomy in its totality before diagnosing physical ailments and prescribing remedies, the authors have done well to applying the same principle to an industry. Perhaps this new approach may yield better results.

They have studied the problem of industrial sickness from various angles : concept of an industry in its totality, identification of sickness, factors causing sickness, identifying such sickness, and remedial measures to be taken in time and rehabilitation measures more or less in a traditional way.

Their conclusions, however, are circumscribed by the limitations of a rather narrow understanding of an industry. For instance, they conceive an industry as a manufacturing unit and feel that sickness can be prevented by a harmonious cooperation of finance, technology, management and labour relations. Any distovtion in any of these factors may bring about sickness in an industry. And banking institutions which finance industrial ventures have to keep in mind constantly the harmonious and delicate balance of all these factors. True but there is something more than these which might cause industrial sickness.

For instance, the successful functioning of an industry in the modern context depends on a large number of external factors. The success of an industry is not solely determined by the adequacies of finance, technology, business and industrial management and cooperation of labour. Industry does not manufacture goods or function for the sake of industry. Its products must be sold and absorbed in the society. Modern trends of increasing protectionism among the industrially developed countries of the West, world wide depression trends, high cost of finance and challenging patterns of consumers' behaviour may well cause industrial sickness.

While the authors seem to have emphasised on the traditional norms for correcting industrial sickness, it is rather unfortunate that the new factors mentioned above have not been thought of by them. However the book serves a limited purpose as a dependable guide to bankers, financial institutions and industrial consultants who help frame industrial health. The reviewer feels sincerely and honestly that the authors should have done well to make a study of the external factors which cause industrial sickness. If they had done so and thrown some light as to how these adverse factors could be avoided or at least their deleterious effects minimised the book would have been more valuable and rewarding.

—**E. P. Radhakrishnan**

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Integrated child development services

Target : **320 blocks**
(for 1982-83)
Achievement : **317 blocks**
(April-December, 1982)

15

The 20-point action plan

Dwelling units

Target : **1.86 lakh units**
(for 1982-83)
Achievement : **79,000 units**
(April-December, 1982)

10

Regd. No. RN 949/57
P & T Regd. D. (DN) 152
Licensed U (D)-52 to post without pre-payment at Civil Lines Post Office, Delhi

11

Electrification of villages

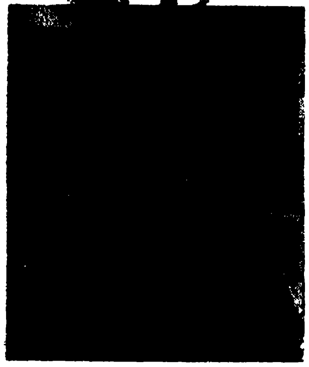
Target : 26,254 villages
(for 1982-83)
Achievement : 12,580 villages
(During April-December, 1982)

The 20-point action plan

Drinking water

Target : 34,233 villages
(for 1982-83)
Achievement : 23,574 villages
(During April-December, 1982)

8



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YOJANA

The non-aligned summit to strive for world peace and justice for the have-nots

The 20-point programme monitoring cell reports . . .

1

738 new pumpsets energised daily

In December 1982, 36,000 more pumpsets were energised, making a total of 203,000 pumpsets during April-December 1982 against 1982-83 target of 378,000 pumpsets.

12

71 lakhs trees planted each day

In December 1982, 2.04 crore more trees were planted all over the country, making a total of 195.16 crores more trees planted during April-December 1982 against 1982-83 target of 196.14 crore trees.

Why not tax income from agriculture

Our next issue, 16-31 March 1983 will carry two more articles, 5th and 6th in the Symposium Series, by Surjit Singh Barnala and Piloo Mody.

YOJANA

Volume 27 Number 4

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As the NAM gets ready to face challenges

The seventh non-aligned summit conference is providing an opportunity for building up opinion favourable to save the world from a nuclear holocaust. The summit will also consider problems hindering the creating of a New International Economic Order. Without a more equitable global economic system on which the world's resources of trade and technology would be assured of a fair distribution and utilisation between the 'have' and 'have not' countries the poor in the third world countries will become poorer, and the even widening gap between the rich and poor nations will build up intolerable tensions in International life and social upheavals within countries inevitably leading to global conflict.

C. S. JHA

THE Seventh Non-aligned Summit due to be held in Delhi in March 1983, is being convened in vastly different circumstances from those prevailing at the time of the first summit in Belgrade in 1961. At that time the dominant global issue before the non-aligned countries was decolonisation, which provided a focus to united and dedicated approach by the aligned countries. Tensions existed between the super powers at that time also; they were merrily exploding nuclear weapons of increasingly lethal power in the air and underground as part of their programme of nuclear tests for perfecting these diabolical weapons of mass annihilation; but there was no fear of the imminence of a nuclear war.

The realisation by both the super powers of M.A D. (Mutual Assured Destruction) in the event of a nuclear war had created a balance of terror which, however objectionable for other reasons, had ensured freedom from such a war

The power equation established in the last few decades, which had given some stability to international relations, and had consequently held out prospects of world peace, however uneasy, has changed Today the balance of power situation is complicated with the involvement of China in the power game and the growth of many scondary power centres thanks to the arms race and penchan of super powers to pump highly sophisticated and lethal arms into these countries

One of the super powers is talking of and seems to be preparing for tactical nuclear strikes and a limited nuclear war on the assumption of an inevitable and winnable nuclear war; and what is probably much worse, it is conditioning the minds of people to tolerate the idea of nuclear war. Some political analysis think that if these existing trends are not reversed and the nuclear armaments race goes on unabated, there may be a nuclear war in the near future destroying civilisation and threatening even the continued existence of the human race

Nuclear holocaust

How to save the world from a nuclear holocaust is the problem of problems to which the non-aligned countries as a group devoted to and with a large stake in peace must apply themselves. Indeed, in the amorphous group of non-aligned countries, the crusade for peace and disarmament can provide a united platform for efforts towards these ends.

It is not often that Heads of States and Governments can meet. Hence the forthcoming Summit provides a unique opportunity for mobilising world opinion and making its contribution to the creation of conditions in which a nuclear war can be avoided. There are other problems and situations which have a vital bearing on the maintenance of international peace and which must also receive the attention of the Summit.

The economic malaise affecting both industrialised and developing countries, particularly the latter, is a problem of global dimensions, on the solution of which depends future international peace and harmony. The present international economic system which is essentially a continuation of the one evolved in the colonial era and was based on the exploitation of the raw materials of the colonial and dependent territories in Asia, Africa and Latin America, is geared to the benefit of the industrialised countries of the West. It is completely out of date and unacceptable in the conditions of today.

Without a more equitable global economic system in which the world's resources of trade and technology would be assured of a fair distribution and utilisation between the 'have' and 'have not' countries, the poor in the developing Third World countries will become poorer, and the ever widening gap between the rich and poor nations will build up intolerable tensions in international life and social upheavals within countries inevitably leading to global conflict.

The efforts during the past few years at the United Nations and the so-called North-South Dialogue have so far been frustrating because of the adament and negative attitude of some important industrialised countries. The Group of 77 and the non-aligned group have been deeply involved in this question and have made constructive efforts towards the establishment of a New International Economic Order (NIEO). They will no doubt consider at the Summit what further steps and initiatives should be taken to this end.

NIEO

There is a basic connection between disarmament and the establishment of a new global economic system. If genuine disarmament, both nuclear and conventional, could come about and even a small fraction of the hundreds of billions of dollars each year could be diverted towards the development of the Third World countries and the amelioration of the economic and social problems which they face now, that would provide a solid basis for a more equitable international economic order.

The Non-aligned Summit will no doubt consider these two vital issues, viz., how to prevent a nuclear war and put a brake on the accelerating arms race, and how to bring about a more equitable world economic order. The conference perhaps may wish to consider the establishment of task forces in the form of standing bodies, to pursue these objectives in concert with other like-minded groups at the United Nations and elsewhere, and in the capitals of the concerned countries. It should be noted in this connection that, although the non-aligned countries do not have much military power, in totality, speaking as they do for nearly half of the human race, they have a considerable influence.

Apart from the problems referred to above, which have global dimensions and on the solution of which depends the future peace and welfare of mankind, there will be a plethora of other problems before the Summit, many of which have unfortunately tended to become chronic; e.g., the Palestine question, Afghanistan, Kampuchea, the Iran-Iraq War, the Morocco-Algeria conflict, etc.

On some of these questions such as Afghanistan and Kampuchea there has been a good deal of discussion in the past in the non-aligned group. On the former, the differing perceptions of the members of the group have been reconciled in the New Delhi Declaration issued at the end of the Non-aligned Foreign Ministers Meeting in February 1981. It is difficult to see that the Summit can or need try to go further.

The question of Kampuchea has also been debated for more than once at non-aligned group meetings. While this question will no doubt come up again, it is doubtful if it need take a disproportionate amount of time as has happened in some of the non-aligned group meetings in the past. It is not in the nature of the non-aligned countries to impose the views of members on others of a different perception, specially in the matter of recognition of a government or of a regime; and the summit will do well to rest content with the formula evolved in Havana regarding the seating of Kampuchea, viz., to keep the seat vacant.

The blatant Israeli aggression in Lebanon and the brutality and genocide committed on innocent Lebanese and Palestinian civilians is an outrage against the entire international community and the United Nations and deserves the severest condemnation. This will no doubt be among the subjects to be discussed at the Summit. The Conference is expected to condemn Israeli action and demand the withdrawal of Israeli forces from Lebanon. It may also consider initiatives aimed at preventing the repetition of such action by Israel and at helping in the creation of a Palestinian homeland and state.

An Amorphous Body

More than 20 years after the institutionalisation of the non-aligned movement, the non-aligned group, always an amorphous body, is much more so today. While the expansion of the group from some 30 to 97 members demonstrates the growing strength and influence of the movement, such expansion has also brought in elements of weakness. The solidarity within the group and consequently the moral and political impact of its pronouncements and declarations have been adversely affected.

Within the group itself there are schism and conflicts. The Iran-Iraq war, the Ethiopia-Somalia and the Morocco-Algeria conflicts, in which members of the non-aligned movement are fighting one another, stem from the failure of the countries concerned to live up to the ideals of non-alignment, and have, not unexpectedly, affected the solidarity of the movement. It is necessary for the non-aligned group to put their own house in order and to address themselves to the solution of these conflicts much more earnestly than before.

It is only fitting that the Seventh Non-aligned Summit should be held in New Delhi where the concept of non-alignment was born . It was Jawaharlal Nehru who first propounded non-alignment and non-involvement in big power conflicts in 1946, soon after he became Prime Minister in the Interim Government and later at the Asian Relations Conference in New Delhi early in 1947. With the intensive substantive preparations and consultations with other non-aligned countries undertaken by the Government of India, and given a constructive approach to world problems, there is hope that the Seventh Non-aligned Summit will give a new direction to the movement and take decisions and initiatives that may help in the solution of global problems, and more particularly the problems of the Third World countries.

(*PTI Feature*)

For too long we of Asia have been petitioners in Western Courts and Chancelleries. That story must now belong to the past. We propose to stand on our own feet and to cooperate with all others who are prepared to cooperate with us. We do not intent to be the playthings of others.

—Jawahar Lal Nehru at the Asian Relations Conference, New Delhi, 1947.

The global crisis is part political, part economic. In any distress the hardest hit are the weak. Developing countries are the worst sufferers in the worldwide inflation that has followed the successive increases in prices of oil and capital goods. To provide our people the basic amenities of life have become so much more difficult because of the phenomenal rise in our import bills.

—Smt. Indira Gandhi.

Whither goes the World economy

Today's world shows that the prosperity of each nation depends upon the well being of others. Economic Interdependence is a major factor now. The growth of markets and economic activity in the developing world is essential to the prosperity of the developed world.

GAMBHIR BAHADUR HADA

THE GULF BETWEEN RICH AND POOR is staggering. The north accounts for only one fourth of the world's population and four fifth of its income. In today's world the developed, which means the richest, the most affluent and the industrially the most advanced countries have a virtual monopoly of the technical applications of science. Only a privileged minority benefits from such applications while the vast majority of the needy people spread across the continents continues to be afflicted with poverty and all the misfortunes and intense misery it implies.

Paradoxically about 72 per cent population of the globe resides in developing countries which share only 38 per cent of the food supplied by agriculture. The oil crisis has compounded the problem saddling the third world with immense foreign debts. There has been a slow down of economic activity both in the developed and developing nations throughout the seventies and the prospects of its recovery during the 80s as projected by the World development Report 1980 are not high.

Negotiations between rich and poor countries for a new deal on trade and aid have been going for some time. The leaders of the seven richest countries at the Ottawa Summit, of July 1981 gave a clear signal to developing countries that they are ready to enter into serious talks after a period of complete deadlock.

Brandt Commission

Brandt Commission, (North South; A programme for survival) urged global action based on the mutual interests between the world's developed and developing nations. It was the Brandt Commission which called for the summit of north south leaders that eventually took place in Cancun, Mexico, in October 1981. Cancun may not have been a dramatic success; but it was not a failure. The discussions were serious and the tone constructive. It was an unprecedented meeting, which represented a step forward in efforts to end the stalemate and get global negotiations started early.

The UN conference on the LDC's (Least Developed Countries) decided to double the aid to these countries by mid eighties—'Everyone is satisfied' was said to be the outcome. But the euphoria soon vanished into the thin air. The UNCTAD (United Nations Conference on Trade and Development) expert group had recommended in November 1979 that the net disbursement to the LDC's be quadrupled in real terms from about $ 3.5 million in 1977 to about $ 14 million in 1990. The bulk of the proposed aid increase was recommended to be achieved before 1985.

The problems of the poor nations are immense in scale and in intensity. An estimated one hundred million of population in less developed countries suffers in some degree from malnutrition. Half a million people die annually of starvation. Because of lack of proper medication crores of people are struck down with diseases like malaria, typhoid, dysentry, cholera etc. In spite of these ills in the society of poor countries of the world, the population within their folds is increasing at a fast pace.

According to the United Nations Development Programme (UNDP), there are about 800 million illiterate people in the world today and 60 per cent of them are women. Most of the illiterates are found in the developing countries whose estimated population totals 3.2 billion compared to the 1.1 billion in the developed countries.

The contemporary world presents the paradox of a widely incoherent monetary system, bringing together national systems, which are often no less incoherent, into a collection of commercial and financial transactions (short or long term) which are becoming more and more extensive and more and more numerous. Monetary interdependence has never been so great, while the framework of this interdependence has never been more fragile.

Reasons for Inflation

The major reasons for inflation in all developing countries are generally to be found in domestic factors like the fall in agricultural output and deficit financing. External factors include the increase in oil prices and the steep rise in prices of imports of all kinds.

Energy prices remain one of the key uncertainties affecting growth prospects. The economies will be facing serious balance of payments crisis in developing countries. While we should certainly go all out to lessen our dependence on imports, this must be determined by economic considerations and comparative costs and not by nationalist sentiment or the pressure of interested domestic lobbies.

According to the Annual Report of World Bank, 1981, economic growth during 1980 in the developing countries outpaced growth in the industrial counrties by more than threefold. This achievement was made in the face of a number of economic problems : recession in the industrial countries, high energy costs and interest rates, volatile exchange rates, reduced level of growth in world trade, and sharply declining prices in the second half of the year of several primary products.

The importance of foreign capital for development is difficult to estimate precisely. Foreign capital often provides the essential imports of machinery and materials that make other domestic investments possible.

According to the Report of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), about 640 million people in Asia and the Pacific are undernourished while foodgrain production is declining in most countries. It is said that in order to reduce the undernourished population, agricultural production should grow 3.9 per cent per annum in 1980-90 and 3.5 per cent per year in 1990-2000, with net cereal import established at around 14.2 million tons per year as in 1975.

The present international economic system is no longer adequate. The international monetary system need to be reformed to diminish the role of the Dollar, to give the third world greater voice and improved terms of trade.

In view of the global phenomenon of inflation which is to continue in future also, even though the rate may slow down, it is now time for all developing countries to adopt a policy of helping one another through aid and trade. They must come to a common platform for their economic growth as against depending on aid from the developed countries.

In the third world, there is still ample scope to increase agricultural yields, especially from the small holdings of hundreds of millions of peasents who constitute the majority of the population of these countries. And it is here that global efforts to increase food production should be concentrated.

Interdependence

Today's world shows that the prosperity of each nation depends upon the well-being of others. Economic interdependence is a major factor now. The growth of markets and economic activity in the developing world is essential for the prosperity of the industrialised nations. The economic health of the developed world is even more important for the development goals of the developing nations.

If the world is to progress as uniformly as possible in terms of economic justice, sciences and technology have to be shared; 'technology for all' should be the slogan of the 1980s. This was the chief aim of the 130-nations conference on Science and Technology for Development (UNCSTD) which was held in Vienna in August-September 1979. The third world stressed its demand that the major industrial nations pay 2,000 billion dollars a year to a special fund until 1985 for helping the world's poor nations.

During 1982 we must work to increase the capacities of the IMF and the World Bank to make the Common Fund on commodities functional; and to secure the law of the sea convention.

The third world nations share the common fate of under development. They vary in their resources, a few have surplus capital, some have technology and expertise, most have raw materials and all offer markets. The complementary use of these different resources is acknowledged to be an important path to self-reliance. But greater energy will need to be devoted to devising packages to put them to work for mutual benefit.

An action to avert the crisis of the global economy would be effective only if taken within the economic framework suited to the interests of both the developing and developed countries. Unfortunately, the present structure though seemingly favourable to the developed countries is neither in their long-term interest, positively, nor even in the short-term interests of the developing countries.

Restructuring World economy

Today, there is a great need to restructure the world industry, reform the international monetary and financial systems, change the international pattern of consumption and trade for essential raw materials, transfer the technology and assistance to developing countries and the international community for economic cooperation among the developing countries. The developing countries continue to remain helpless when benefits resulting from concessions given in one particular field by the developed countries get neutralised as a result of other developments over which they have no control.

We live in an interdependent world, and major economic and political events effect every country however small or large. International cooperation has become more crucial now than ever to maximise gains and minimise losses and prevent spread of economic malaise from one country or region to another. A special responsibility rests on the developed countries to resist the temptation of shifting their burdens on to other countries through overt and convert means like tariff and non-tariff barriers.

The new structure will have to be based on equitable economic relations between the rich and the poor nations. The main aspect of this relationship structure would then have to be worked out in their proper order. In view of the serious impact of the energy crisis on the economies of the developed and developing countries, it is imperative that both should take coordinated action at the national and international levels.

A CASE STUDY

'Abortion, the only answer to fertility'

This article deals with cases of repeat Medical Termination of Pregnancies (MTPs) done at the Family Planning Centre, KEM Hospital, Bombay. The authors collected the data by interviewing the patients with the help of questionnaire to find out the reasons for their repeat abortions. The paper reveals that the majority of the unmarried women gave reason for undergoing repeat MTPs because of social stigma whereas majority of the married women said that they wanted repeat MTPs for the sake of spacing. The paper also deals with other socio-economic and demographic characteristics of the respondents.

SHEILA DIVEKAR, GOPU NATARAJAN & V. N. PURANDARE

THE Medical Termination of Pregnancy (MTP) Act in India came into force in 1972. Since then the demand for abortions is rising steadily. This is, therefore, a matter of great concern because the growing number of women who have undergone abortions once, are at a risk of having repeat abortions, unless they use effective contraception methods.

The Government of India is concerned about the low health status of women in the country due to anaemia, occurring on account of a multitude of social factors like malnutrition, poverty, poor sanitation etc. The already low health status may be further affected due to repeated abortions. Also, the cost involved in doing an abortion is quite high, if performed under aseptic conditions and by trained doctors.

The experience of gynaecologists all over the world has shown that any currently available method of inducing abortion is not totally free from adverse effects even if carried out with utmost care, and may, in fact, impair the woman's fertility and health in some way or the other. Medical termination of pregnancy is, therefore, emerging as a crucial material health issue.

Materials and Methods

During the period, May, 1979 to November, 1980, 2,994 MTPs were performed in the Family Planning Centre, KEM Hospital, Bombay. One hundred women, who during this period obtained a total of 218 MTPs, of which 161 were performed in KEM Hospital, were interviewed with the help of a questionnaire to find out the reasons for their repeat abortions and thereafter the data was analysed. Actually, the number of women demanding repeat MTPs may be more as some of them do not give history of previous MTPs, and a few others might have given false names and addresses. These women came from Gynaecological OPD or were directly referred to the Family Planning Centre by family physicians or friends.

Results

The centre is open to all, but being situated in a labour area like Parel, is frequented by the lower socio-economic class of people.

The socio-demographic profile is shown in table 1. In all 30 per cent of the patients were between 20 and 24 years. Out of 32 unmarried girls, 13 were less than 20 years of age.

TABLE 1

Socio-Demographic Characteristics

A. Age and Marital Status

Age (Years)	Married	Unmarried	Total
14	..	3	3
15—19	3	10	13
20—24	23	15	38
25—29	27	2	29
30—34	10	1	11
35 and above	5	1	6
Total	68	32	100

B. Age and Number of MTPs

Age (years)	Number of MTPS			
	2	3	4	Total
14	2	1	..	3
15—19	11	..	2	13
20—24	33	5	..	38
25—29	24	5	..	29
30—34	9	2	..	11
35 and above	5	1	..	6
Total	86	17	2	100

C. Number of MTPs

Parity	2	3	4	Total
0	33	8	..	41
1	14	2	..	16
2	30	2	2	34
3	5	1	..	6
4 and above	2	1	..	3
Total	84	14	..	100

Education	Married	Unmarried	Total
Nil	18	7	25
Primary	11	14	25
Secondary	10	7	17
SSC	21	4	25
Graduate	8	..	8
Total	68	32	100
Employment status			
Employed	20	8	28
Unemployed	48	24	72
Total	68	32	100
Religion			
Hindu	49	29	78
Muslim	5	..	5
Christian	14	3	17
Total	68	32	100

TABLE 2
REASON FOR PREGNANCY AMONG MARRIED

Reason	1st MTP	2nd MTP	3rd MTP	4th MTP
1. Irregular use of contraception/ failure of contraception	64	59	10	2
2. No contraception	3	1	..	..
3. IUD expelled	..	7	..	..
4. Planning Pregnancy.	..	1	..	..
5. Sex detection	1	..	..	..
Total	68	68	10	2

TABLE 3
REASON FOR PREGNANCIES AMONG UNMARRIED

Reason	1st MTP	2nd MTP	3rd MTP	4th MTP
1. Under obligation	12	8	1	..
2. Incest	1	..	..	..
3. Pathological	4	4	4	..
4. Mentally ill	1	1	..	..
5. Engaged	8	8	..	..
6. Irregular use of contraception.	4	9	1	..
7. Paid for	2	2	..	..
Total	32	32	6	..

Table 4
First and Second Trimester Abortion According to Martial Status

Married	1st MTP	2nd MTP	3rd MTP	4th MTP	Total
First Trimester	58	61	9	2	130 (88%)
Second Trimester	10	7	1	..	18 (12%)
Total	68	68	10	2	148
Unmarried					
First Trimester	17	28	5	..	50 (71%)
Second Trimester	15	4	1	..	20 (29%)
Total	32	32	6	..	70

Table 5
Reason for MTP

Married	1st MTP	2nd MTP	3rd MTP	4th MTP	Total
Socio-economic	14	12	2	2	30
Social Stigma	3	2	..	..	5
Not compromising career	1	3	1	..	5
Social Reasons	1	2	1	..	4
Spacing	45	48	6	..	99
Medical Reasons	4	1	..	..	5
Total	68	68	10	2	148
Unmarried					
Social Stigma	24	23	5	..	52
Compromising career	6	..	..	..	14
Medical Reasons	2	8	1	..	4
Total	32	31	6	..	76

Table 6
Husband's Knowledge and Reaction to Pregnancy

Husband's knowledge and reaction	1st MTP	2nd MTP	3rd MTP	4th MTP
Husband informed	66	64	8	..
Reaction concerned/worried	49	51	8	..
Did not want to continue	12	11	..	..
Wanted to continue	3	1	..	..
Indifferent	2	1	..	2
Did not inform husband	2	4	2	..
Total	134	132	18	2

Table 7
Physical Reaction to MTP (Immediate) According to Marital Status

Reaction	Married				Unmarried			
	1st MTP	2nd MTP	3rd MTP	4th MTP	1st MTP	2nd MTP	3rd MTP	4th MTP
Painful	19	15	16	..	6	9	2	..
Bearable	24	30	1	2	20	19	4	..
Uncomfortable	1	..	..	..	..		..	..
Painless	24	23	3	..	6	4	..	..
Total	68	68	20	2	32	32	6	..

Table 8
Later Psychological Reaction to MTP and Martital Status

Marital status	Married				Unmarried			
	1st MTP	2nd MTP	3rd MTP	4th MTP	1st MTP	2nd MTP	3rd MTP	4th MTP
Relieved	60	62	6	..	25	16	3	..
Felt sorry	5	6	3	..	1	4	2	..
Guilty	3	..	..	..	4	9	1	..
Repentant	..	..	1	2	2	3	..	..
Total	68	68	10	2	32	32	6	..

Table 9
Time Interval Between MTPs

Months	3	3–6	6–12	12–24	More than 24	Total
1st and 2nd MTP	3	10	21	30	36	100
2nd and 3rd MTP	..	5	4	2	5	16
3rd and 4th MTP	..	..	1	..	1	2
Total	3	15	26	32	42	118

Table 10
Use of Contraceptive Before and After MTP

Contraception	Before 1st MTP	After 1st MTP	After 2nd MTP	After 3rd MTP	After 4th MTP
None	67	56	18	14	..
IUCD	6	24	64	-	1
Oral Pills	14	15	8	..	..
Injectable	..	..	7	..	..
Vasectomy	..	..	..	..	1
Condom	13	5	..	..	..
Total	100	100	97	16	2

Out of the total 41 per cent of the women were nulliparous. About 50 per cent of the women had no education or just primary education. Among these respondents 33 per cent were unmarried and 30 per cent married women employed.

It appears that the proportion of unmarried women was high perhaps, as the sample is from an urban area and the respondents belonged to low income group. Also, all the unmarried girls seeking abortions in this centre get special attention from social workers and are interviewed with the aim of giving them sex education and help in their rehabilitation

The distribution according to religion shows that the problem exists in all religious classes.

Failure of Contraceptives

A majority of married women gave 'failure of contraception and its irregular use' as the reason for undergoing MTPs (Table 2). Amongst the unmarried, as seen in table 3 'being under obligation' to their male partner who had been helpful to them in some way, or 'being engaged' before they were married, made them more prone. Seven women claimed that the IUDs were expelled. The pathological or the mentally ill women had abortions repeatedly and their psychiatric evaluation was done.

Out of 148 MTPs in 68 married women, only 12 per cent and out of 70 unmarrieds only 20 per cent came in second trimester (Table 4). A larger proportion seem to come early in first trimester for their second MTPs. Proportionately, a large number of women visited a general hospital for second and third MTPs, whereas for the first MTP they had been to a private clinic (table 6).

The reasons for MTPs are shown in table 5 Spacing seemed to be the common reason for the married women, whereas social stigma was a strong reason for the unmarrieds.

A majority of married women had informed their husbands about their decision to abort (Table 6). Though concerned, they did not mind it much. Husbands who did not definitely want them to continue in the first pregnancy account for 18 per cent whereas 17 per cent husbands did not want them to continue in the second pregnancy. Only a few husbands wanted their spouses to continue, but there did not seem to be any serious discord over it. Both married and unmarried women (65 per cent) made the decision to have MTP as soon as they were examined, but 32 per cent went back to think over and came back after a considered decision.

MTP painless

MTP is bearable or painless has been found by a majority of women as can be noticed form table 7. About 15 per cent of women, both married and unmarried found the procedure of MTP painful but the incidence of this reaction remains the same in second and third MTPs. Both the married and unmarried had a lot of anxiety related to the procedure of MTP. Feelings of regret, sadness, loss were observed in these women, but these feelings were very short-lived.

When interviewed after 20 days, a majority of married and unmarried women felt relieved after MTP, as table 8 shows but a small percentage felt sorry, guilty or repentant.

Thirty-four MTPs were repeated within a year, 32 within 2 years and 42 after 2 years, as shown in table 9.

The use of various contraceptives before and after MTP by the respondents is shown in table 10. A large number of women were made to accept IUDs and a few accepted oral pills, injections, and three were sterilized. With repeat MTPs, they were motivated by the staff to accept contraception. Yet, there is a significant number who refused contraception even after first MTP or repeat MTPs. For example, a nulliparous married women seeking MTP for the first time did not know exactly why she was undergoing it, but was very sure she wanted it. She did not want any contraception herself and relied on her husband to take care of it. One of the unmarried girls had her first MTP because of social stigma. When she was married, she contracted V.D. from her husband and had to undergo her second MTP. When she was pregnant again, she had jaundice and underwent MTP for medical reasons.

Discussion

A women may allow herself to be impregnated in a totally unplanned way because she may be ignorant of contraceptives or the end result of sex. But on considering the total circumstances she would not like to continue that pregnancy. For her, abortion comes as a solace, as an after-thought or a way to correct her inadvertant behaviour. when she thinks of it in a more responsible way. Abortion is like a remedy for a catastrophe that has already taken place .This indicates a great need for counselling as there is utter irresponsibility sometimes related to sex, even among the unmarrieds. Instead of feeling frustrated at the sight of a patient who comes for repeat MTP; she can be given an insight into her own behaviour. For the important thing to bear in mind is that an unintended pregnancy is a dilemma which a woman or a couple must resolve to cope up with the stress in their lives. Poor education, teenage seem to aggregate the problem. But these young people also need the other equally important form of service such as sex and family like education.

The social and financial pressures due to urbanisation are rising day-by-day, with the result that the women have to manage housework and jobs outside. In general, low income couples are less successful users of contraception; therefore, abortion is relatively more helpful to them in maintaining the desired family size

Till recent past, the event of girls getting menarche, used to be celebrated among certain communities. Today, the mothers themselves are not well informed and hardly seem to find time for explaining it. The neglect of such an important event in their daughter's life can lead the young girls to have a negative reaction to menarche, which can affect their personalities and later on their sex lives.

Among the reasons for pregnancies that were terminated, a majority of women had put the blame on failure of contraception. It is probable that they may not be using anything or may be using the contraceptives irregularly. But they thought that abortion service will be easily available to them, if they mentioned that their pregnancies were due to failure of contraception. The engaged girls seem to constitute a high risk group. Some of the girls or boys used contraceptives but very irregularly. Most of these girls felt shy to broach the subject and were presuaded by their male partner that there would be no harm in one or two exposures.

One unmarried girl was mentally ill with psychopathic tendencies and was taking treatment from the psychiatric department of the KEM Hospital, Bombay. Though abortion helped in relieving her problems as also those of the pathological personality girls, they developed similar type of problems, a few months later, which proves the compulsive nature of their repeated pregnancies. They seemed to be pre-disposed to immaturity and emotional instability through personality characteristics and found some kind of fulfilment in the illegitimate pregnancies.

A small profile

A small profile can be made up of girls who were interviewed. Most of these girls came from a poor family background. Their parents were not staying together due to death, separation or work in a far off place. Some had severe handicaps like father being a drunkard or not employed or severely incapacitated. Sometimes, the mother was too demanding or full of conflicts herself. The severity of relationship between them left the girls with no ideal parental figures whom to emulate. A few of these girls were submerged in feelings of inferiority. These and the less intelligent ones fell an easy prey to their male partners who could lure them under the false pretext of tenderness and love.

There may be some psychiatric sequelae following a legal abortion, the severity of which is difficult to assess because women who develop such problems may hardly come back and report them. But, it will be a good practices to discuss any conflicts that may arise in relation to an abortion with a social worker or a doctor, to avoid guilt feelings. Sometimes due to the social setting or apprehensive adults, abortion does give rise to such problems, but it is to be hoped that these women recover with the lapse of time.

The women in this study are from a less educated and poorer society. They face the problems of ignorance and inability to take quick decisions. Lack of awareness of MTP facilities cannot be a contributory factor as they have already undergone MTPs and know about the related problems. Indifference and inertia seem to make them sometimes tardy in seeking MTPs, which leads to adverse after-effects.

Late awareness of problem

In the case of unmarried, irregular periods often leads to late awareness of their problem coupled with the difficulty of communicating it to reproving adults, who must accompany them to hospitals to give consent as guardians. Sometimes, the girls purposely delay their visits to a doctor because they feel that they can win over their male partners, who will be forced to marry them.

It may be that the familiar surroundings increase the value of the service given. This is why our patients come back to us for repeat MTPs or it may be that they could not afford to go out with experience, the women come to know about the free and satisfactory facilities in general hospitals.

Forty to fifty per cent pregnancies end in abortion, which is a common and known practice of fertility control in all society. Though less dangerous than child birth, the rate of complications—physical and psychological trauma, rises when abortion is performed in the second trimester. Of course, it also depends on a particular society to make the experience more traumatic or negligible; e.g. in the Indian society, the social stigma attached to out-of-wedlock pregnancies gives rise to a lot of anxiety and guilty feelings. Still, any patient undergoing an abortion, with the best of facilities, is exposed to some risk with regard to her future fertility. She may become infertile due to pelvic infection or she may undergo spontaneous abortion or pre-mature labour in her future pregnancies which, in turn, may lead to perinantal mortality. The incidence of ectopic gestation is also known to have increased in Japan and Great Britain after the abortion act was legalised.

Any nulliparous woman, therefore, has to be warned about all these risks, when she comes to the clinic seeking abortion.

A significant number of women have found the immediate reaction to MTP bearable or painless. It may reflect their attitude—they wanted MTPs so badly that pain due to procedure hardly mattered. More have felt relieved after the MTPs than anything else. The psychological after-effects of an abortion on a normally well-balanced person are not very significant as many studies have shown. Except for anxiety and depression related to the procedure itself, these women seemed to benefit atleast symptomatically.

Repeat MTP

Each case of repeat MTP needs to be studied over a long period, to see adjustment to MTPs before and after. A long term follow up study will also reveal. if the MTP procedure is truly followed in a large number of cases, problems of menstrual abnormalities, infertility, poor obstetrical outcome and psychosocial and marital problems.

The married women in this study wanted abortions for spacing or were not interested in any further additions to the family. They had typical difficulties of housewives due to social, economic and health reasons. It is necessary to persuade these women to accept contraceptive measures or a surgical method of sterilisation. Our experience shows that after the MTPs the women are certainly more receptive to family planning advice. The unmarried women also can be introduced to contraception and the fear of injury to body, sex and community has to be overcome by proper counselling. Awareness regarding availability of abortion facility should be created and its comparative safetly, if performed by trained hands in early pregnancy needs to be stressed. Women need to be made to understand that repeat abortion will make them lose their resistance to disease.

Continued on page 15

What ails agricultural credit institutions?

JAIKRISHNA [illegible]

Cooperative, commercial and regional rural banks made multipronged attack on the strong hold of private moneylenders in rural areas by providing finances to the weaker sections for their agricultural operations. But lack of coordination among the agencies, poor performance in recoveries, and lack of insight into the complex agrarian problems have proved to be the drawbacks in the existing system. To strengthen the banking structure and ensure free flow of credit, the author suggests that measures like geographical demarcation, compulsory repayment, and strengthening primary agricultural credit societies, should be implemented.

A. R. PATEL

INDIA has now accepted a multi-agency system comprising co-operative, commercial and regional rural banks for financing programmes in the agricultural and rural development sector.

The century old plight of Indian cultivators particularly in terms of their perpetual and heavy debt burden was first traced out very concretely and comprehensively by the All-India Rural Credit Survey Committee during 1951-52. Its important findings covered the sources of rural credit both institutional and non-institutional, terms and conditions of lending and the extent of debt burden on all the categories of farmers, alongwith a set of recommendations.

Among the institutional credit agencies cooperatives have a long history of development dating back to 1904, with the primary object of providing cheap credit to the farmers and protecting them from exploitation by the private moneylenders.

A new dimension in rural credits

The assignment of a bigger role to commercial banks in agriculture and rural development is a new dimension in the institutional structure of rural credit. Since the nationalisation of major commercial banks in 1969, there has been a revolutionary change in the philosophy of lending by commercial banks. This change is mainly twofold: the transformation of purely commercial banks into development banks and the diversification of banks operations across the traditional boundaries to cover agriculture, more precisely, the rural sector as a whole. As a result, the burden of risk and responsibility both in terms of business and social commitment of the banks as change agents has become heavier. Because of inexperience of the rural situation in terms of its complex agrarian relations and general socio-economic backwardness the commercial banks operating in rural areas have been cautious and careful about the various types of problems of development to be tackled.

The Regional Rural Banks (RRBs) came into being as a result of measures under 20-point economic programme announced in 1975. The idea was that in order to fill the gap created as a result of the step towards eradication of rural indebtedness, a set of low cost rural banks sponsored by the nationalised commercial banks would be set up at the doorsteps of the farmers particularly where the cooperative structure was weak and commercial banks did not enter. A role of crucial importance was assigned to these banks for forging a link between other credit agencies and catering effectively to the needs of the marginal farmers, landless labourers, rural artisans who have remained outside the reach of all organised credit agencies.

Thus, today we have 94,019 primary agricultural credit societies (PACS) covering 5,28,000 villages, 337 District Central Cooperative Banks (DCBs) with 7606 offices, 26 State Cooperative Banks (SCBs) with 438 offices, 19 State Land Development Banks (SLDBs) operating through 1000 branches, 889 Primary Land Development Banks (PLDBs) with about six million farmers on their rolls, 117 Regional Rural Banks (RRBs) with their 4,800 branches and 17,650 rural branches of commercial banks.

Institutional agencies

It has been a long haul since the Rural Credit Survey Committee (1954) reported that institutional agencies provided only about seven per cent of rural credit. The current estimate is that about 35 per cent of rural credit requirement is met by institutional agencies. By June 1981 the total institutional short and long term agricultural credit outstanding was Rs. 7454 crores compared to Rs. 1075 crores in 1969. The rural credit structure has undergone a great deal of diversification since the adoption of multi-agency approach. The cooperative branch, particularly at the PACs level, has been drastically pruned. Under the re-organisation scheme, the number of PACs has declined from 2,12,000 in 1960-61 to 94,019 at the end of June 1981, with a membership of about 57 million. With the entry of commercial banks in the sphere of rural credit, nearly 45 per cent of total annual short and long term loans for agriculture are issued by them. Rural branches of commercial banks have increased from 1860 in July 1969 to 17650 as of June 1981. Regional Rural Banks with a modest start in 1975 are now operating in 182 districts in 19 states. One in every eight commercial bank branches operating today is an office of a RRB.

To ensure that co-operative credit is not pre-empted by large farmers and at least 20 per cent of advances go to the small farmers specific conditions are stipulated by the RBI on drawals on short term credit limits sanctioned to central cooperative banks for advances during the year. As a result the flow of credit to the weaker sections has increased from Rs. 213 crores in 1973-74 to Rs. 490 crores in 1977-78—Rs. 198 crores to members holding less than one hectare of land, Rs. 246 crores to those holding more than one hectare but less than two hectares and the rest to tenants, landless labourers, rural artisans.

Role of commercial banks

Commercial Bank's contribution to agricultural credit has substantially increased during the post-nationalised era. Total bank lending to agriculture (direct and indirect both) increased from Rs. 188.42 crores in June 1969 to Rs. 3097.21 crores in June 1980, the share of direct lending having increased from Rs. 53.61 crores spread over 2.6 lakh accounts to Rs. 2363.81 crores spread over 76.8 lakh accounts. At the end of June 1980, total direct finance to agriculture in India made by the banking system stood at Rs. 6339.6 crores. Of this, Rs. 3830.3 crores (60.4 per cent) was contributed by co-operative institutions and Rs. 2509.3 crores (39.6 per cent) by commercial banks and regional rural banks. In June 1972 the share of commercial banks in total rural credit of Rs. 1865.4 crores had stood at only 14.4 per cent. Between June 1972 and June 1980, co-operative credit to agriculture increased by 140 per cent whereas scheduled commercial banks credit to agriculture increased by as much as 774 per cent. The ratio of short term loan to medium and long term loan in cooperative credit to agriculture in June 1980 was 44:56 whereas in the case of commercial banks it was 40:60 which shows a slightly higher emphasis on term lending by commercial banks.

Commercial banks have also been asked to ensure that at least 40 per cent (instead of 33.3 per cent earlier) of their advances flow to the priority sector, and by March 1985, at least 16 per cent of total advances are lent to the agricultural sector. Further within the agricultural sector at least 50 per cent of direct lending should be disbursed to the 'weaker sections' by March 1983. Besides, commercial banks are required to set apart at least one per cent of their aggregate advances of the previous year, for lending under the differential rate of interest (DRI) scheme at four per cent rate of interest to eligible categories and 40 per cent of such advances should be earmarked for Scheduled Castes and Scheduled Tribes borrowers.

The erstwhile Agricultural Refinance and Development Corporation (ARDC) which has now been renamed as National Bank for Agriculture and Rural Development (NABARD) with expanded role and responsibilities, had also intensified its efforts to benefit small farmers under its scheme of refinance. Thus, the share of small farmers in ARDC disbursements increased from 35 per cent in 1975-76 to 58 per cent in 1979-80 and further to 60 per cent in 1980-81.

Policy effects

The policies pursued by the Government from time to time in creating the rural credit structure and enlarging its scope of operation have produced adverse effects of long term nature on planning, managing and administering the rural credit and deserve attention of all these concerned with the subject of rural credit. A few of the noticeable effects are highlighted as under.

The position in respect of overdues of DCCBs has deteriorated in respect of both amount and percentage to outstanding loans. With overdue forming 36 per cent of the loans outstanding, the capactiy of these banks to secure funds as well as to raise their advances has been severely limited. Further, more than a fifth of these banks are not yet having adequate business judged on the basis of the viability norm of a loan business of Rs. 2 crores. The situation is worse in respect of PACS. More than 52 per cent of the borrowers have become defaulters and overdues amounting to over Rs. 800 crores form 45 per cent of loans outstanding. As far as overdues are concerned, land development banks have fared no better than the DCCBs or PACS. The overdues of the Central Cooperative Land Development Banks increased to Rs. 127 crores forming as high as 48 per cent of the total demand.

The recycling of fund has also become slower in case of public sector banks with the poor performance of recovery. The recovery performance of these banks has been a cause of grave concern. The unchecked rise in overdues clearly calls for firm measures which cannot be introduced unless the governments provide adequate support to credit institutions.

The loanable resources of the credit institutions have thus started drying up thereby bringing down the pace of farm development. The worst effect of this may be realised in future from the fact that (i) it would make the decision making process on the part of bank management difficult in regard to its lending policies, procedures and operations, (ii) the moneylenders and pawn brokers would drive the rural folk living so near the brink of destitution, deeper and deeper into the morass of indebtedness.

Though every agency has realised that coordination amongst different credit and developmental institutions pays rich dividends, there has been utter lack of coordination between different agencies. This has resulted in the failure of many important schemes|projects|programmes. The public sector banks formulated impressionistic survey reports as also district credit plans for their lead districts but in absence of coordination, the successful implementation remained a paper exercise. Past experience suggests that the problems of coordination are not necessarily structural and procedural, but they are deeply rooted in the interplay of conflicting interest groups.

Futuristic approach

During the eighties, the farm sector in India in order to achieve 3.3 to 4.0 per cent of growth per annum would require tremendous and sizeable credit which would pose plenty of pernicious problems, especially from the management and administration point of view. The National Commission on Agriculture (NCA) has estimated the credit requirements of the farm sector to be Rs. 16,549 crores by 1985. By 1984-85 commercial banks are expected to meet 50 per cent of the total credit requirements. Even more than this would be required in the eighties in view of the increased demand of institutional credit for large scale on farm development works under major command area development programmes, cultivation of crops of high value under irrigation which would require more fertilizers, pesticides and farm power; dairy development programmes under Operation Flood, and for storage processing and marketing of farm produce.

The Lead Banks have now been formulating third round of district credit plans (DCPs) for their lead districts from January 1983 to March 1985. These DCPs are being scientifically prepared taking into consideration the need for developing essential infrastructural facilities in the rural areas to create a climate conducive for credit absorption. The eighties may witness fundamental changes in this area in view of significant political commitments to reduce hunger, poverty and unemployment. Already six more banks have been nationalised in the beginning of 1980. A process of writing-off of farmers, debt with the co-operative credit institutions has set in. The National Bank for Agriculture and Rural Development was set up from July 1982. This development of significant importance has been witnessed in the early eighties. However, the success of the rural credit structure would depend essentially on the ability and willingness of the management of credit institutions to design innovative products that suit the needs of different segments of rural community. The experience of the past 25 years proves that the weakness of the base level PACS cannot be explained entirely in terms of variables implicit in the patterm of their reforms. It can be largely attributed to the deep rooted power structure at the local and state levels.

Besides, the question is not one of the identifying the operational and policy areas which require coordination but it is that of reconciling conflicting political interests and institutional imperatives. Analysis of the experiences in the past shows that whatever may be the sound rural credit system—so well conceived and meticulously designed—it would fail to meet the expectations unless the political and economic interest groups recognise their role in the development process.

In order to improve the productivity profitability and efficiency of the credit institutions on the one hand and meet the growing demand for credit in the farm sector and rural development on the other, it is necessary that following issues should be resolved at the earliest :

*Demarcating the operational area in relation to the geographical demarcation rather than functional jurisdiction.

*Making the repayment of loans compulsory through enforcement of laws except those affected by the natural calamities for which long term measures including crop-insurance would have to be evolved.

*Strengthening the base level PACS so as to make them focal points for discharging the functions of efficient rural credit system and delinking them from the seat of power politics. ☐

(Continued from Page 12)

This article is only a small beginning. Much more work is needed to study factors which lead a woman to wilfully expose herself to an unwanted pregnancy.

Identification of characteristics of women who come for repeated abortions and profile of women not accepting contraception studies on broader scale will go a long way in identifying these high risk groups, so that appropriate remedial measures can be taken up.

We do not stop cars from running because there are accidents. We admit that there are dangers, but try to minimise them by taking precautions. Similarly, with a careful selection of cases, and improvement in techniques of MTP, supported by contraceptive practice, we will cover a long way in reducing the complications of MTP.

Our present day society is threatened by fertility for which abortion is one of the answers. In a way, it allows the woman to be master of her own body and brings her the joy of bearing 'wanted children'. Unwanted pregnancies will lead to unwanted children for whom society will have to pay dearly over years and generations.

(Courtesy : Health and Population—
Perspective and Issues.)

Training managers for rural development

To lift the rural people above the poverty line, to create more rural assets, to tap the dormant immense resources and exploit them to the best advantage of the rural areas, India has embarked on a number of development programmes. Here comes the need to have proper managerial skills in chalking out, executing and implementing the right schemes at right time and places. The Institute of Rural Management, Anand has been trying to supply managers by imparting training in such schemes.

DR. N. KUMAR

CONCEPTUALLY, integrated rural development means multi-faced, multi-directional development of rural economy by exploiting to the optimum local resources in men, material, land and water. The concept was first proposed in the Central Budget of 1976-77 and a beginning was made in a new direction. In a rural situation, the following are likely to be the main elements :—

1. In the agricultural sector, the emphasis has to be on land reforms, supply of inputs, soil conservation, water management, fisheries, poultry, dairy farming, post-harvest technology, augmentation and harnessing of new sources of energy.
2. Cottage and small industries including Agro-Industries Management and marketing of the products.
3. Health and Family Welfare including environmental improvements.
4. Education, social education and cultural activities.
5. Social Welfare Programme including programmes for children, women and other weaker sections.

An integrated development plan, however, will be in consonance with local resources, enterprise with an intimate knowledge and understanding of local conditions, needs and possibilities.

The strategy and methodology for accelerated rural development will be as follows :

(a) increasing production and productivity in agriculture and allied sectors;

(b) resources and income development of vulnerable section of the rural population through development of the primary, secondary and tertiary sectors;

(c) skill formation and skill upgrading programmes to promote self and wage employment amongst the rural poor;

(d) facilitating adequate availability of credit to support the programme taken up for the rural poor;

(e) promoting marketing support to ensure the viability of production programmes and to insulate the rural poor from exploitation in the marketing of their products;

(f) provision of additional employment opportunities to the rural poor for gainful employment during the lean agricultural season through a National Rural Employment Programme (NREP);

(g) provision of essential minimum needs; and

(h) involvement of universities, research and technical institutions in preparing a shelf of projects both for self-employment and NREP and in preparing strategies for the scientific utilisation of local resources.

Combating Unemployment

Increasing investments are being made in the rural sector to combat the massive problems of unemployment and poverty. A large number of rural development projects addressed to the needs of specific groups of people, geographic areas and commodities are being implemented in the country. Besides, the number of rural enterprises in the co-operative and public sectors have been increasing rapidly in the past few years. Professional rural managers are urgently needed in all these projects and enterprises.

Operation Flood II—with an envisaged total investment of nearly Rs. 485 crores over a period of seven years—will alone need around 400 fresh graduates in rural managerial cadres each year. This programme aims at helping some ten million rural milk producing families to set up co-operatives in 150 districts in the country. Similarly, the setting up of oilseeds producer's co-operatives with an investment of over Rs. 2000 million—will require another 200 managers each year, at least until the mid-1980's. Programme further envisaged include co-operativisation in fruits, vegetables, cotton and fisheries.

The present supply of graduates from the management institutions in India is inadequate to meet the demand for them. Moreover, almost all these management graduates are absorbed by the industrial sector. The rural sector, which so desperately needs professional managers, continues to suffer from an acute shortage. Besides, the rural areas, whose development has such an important place in our Five-Year Plans face diverse socio-cultural and institutional problems which require specialised managerial resources.

Rule of IRMA

The Institute of Rural Management, Anand (IRMA), was established in 1979 at Anand in Kaira District of the State of Gujarat, India, with the active support of the Government of India, the Government of Gujarat, the National Dairy Development Board and the Indian Dairy Corporation.

The IRMA is an autonomous body registered under the Societies' Registration Act, 1860, and is the first in India to undertake professional education of young graduates in rural management.

The IRMA is born out of a conviction that all-round and substained development requires specialised managerial manpower for producers' organisations—and these are crucial for the development of the rural economy of India. The IRMA seeks to generate appropriate managerial resources through management education and training, research and consultancy activities. The objectives of IRMA are :

(1) to impart education and training to young men and women for managing income-generating and development activities for and on behalf of the rural producers.

(2) to offer training courses for policy-makers, directors, general managers and those in charge of specific managerial functions in rural enterprises and projects.

(3) to conduct research on operating problems in order to help improve the management of rural enterprises and projects.

(4) to undertake basic research into the processes of rural management to augment the existing body of knowledge, and

(5) to provide consultancy services to rural enterprises and organisations in the co-operative and other sectors in order to improve their operational efficiency and effectiveness.

The Institute offers a two-year residential post-graduate programme in Rural Management (PRM). The programme will equip its participants with professional managerial skills and abilities essential for managing rural enterprises and institutions that endeavour to bring about change. The distinctive feature of IRMA's Post-graduate programme in Rural Management (PRM) is that it effectively blends education at Anand with field-based training in the village situations as well as in rural producers' organisations. IRMA's aim to build up practical, professional rural managers is reflected on the one hand in the strong application bias built into the courses, and on the other, in the emphasis placed on the two segments of field-based training to which nearly one half of the programme period is devoted. In the Field-Study segment, which forms one part of field-based training, students have opportunities to study the conditions of village life and the functioning of rural institutions in their setting. In the Management Traineeship Segment, forming the second part of the field based training, students are provided opportunity to appreciate the problems and conditions of rural enterprises and their functioning as organised working to bring about change.

Two Field-work modules of five weeks each are conducted under faculty guidance at sites spread all over India. For instance, for their first field-work module, PRM 80-82 students were formed into eight groups and attached to the NDDB Spearhead Teams operating in Ahmedabad, Kolhapur, Guntur, Erode, Bhatinda, Rohtak, Meerut and Varanasi. Similarly, PRM 81-83 students were located in four groups in villages selected from Banaskantha, Ujjain, Nalgonda and Madurai districts.

Bridging the gap

Training is the act of increasing the knowledge, aptitude and skill of a rural manager to do a particular job related to rural development. The main objective of training is 'to bridge the gap between existing performance ability and desired performance'. The following are the main objectives of training :

1. to impact the new entrants the basic knowledge and skill they need for performance of definite task in a better way.
2. To assist the employees to function more effectively and efficiently in their present position by providing them latest information and techniques and developing their skills in their particular field.
3. To build up a second line of competent officers and prepare them to occupy more responsible positions.
4. To broaden the minds of senior managers so that they can correct the narrowness of the outlook that may arise from over specialisation.

Programme in Rural Management is initially started as a 12-month programme to be followed up by a year of one-the-job in a rural producers' organisation before the award of the diploma. Based on a number of considerations, the programme structure was modified and its duration extended to a two academic-year residential post-graduate programme. The Programme in Rural Management curriculum develops basic skills and abilities in the managerial functional areas; accounting and finance, production and processing, marketing, personnel and employee relations planning and control. The class-study segment consists of three terms of ten weeks each in the first academic year and two terms of five weeks each during second year of the programme. Most class-room sessions in any course involve analysis through discussion of real-life situations (i.e., case studies). Students participate in the case-discussions in which the faculty-member offering the session acts as facilitating moderator. Whenever necessary, technical notes are distributed to the students to help them clarify concepts. The field-study segment consists of two modules of five-weeks each. It emphasises exposure to rural producers' relations with cooperative organisations.

(Continued on page 18)

Improvements in estimates of capital formation & savings

A 13-Member working group on savings, set up by the Department of Statistics, Ministry of Planning, under the Chairmanship of Prof. K. N. Raj, has suggested that attempt should be made to estimate capital formation and saving separately for farm households, unincorporated enterprises and for household proper.

The term of reference of the working Group, which included both officials and non-officials were (i) to undertake a critical review of the available estimates of investments and savings in the economy both of the aggregates and their components; (ii) to evaluate their interpretative significance; and (iii) to recommend improvements in the methods and procedures of estimation including suggestions as to the possibility of building up regional estimates.

The working Group has observed that the Central Statistical Organisation (CSO) has by and large drawn upon all available sources of information in the process of estimating capital formation and saving in the economy and have also effected a number of improvements in the estimates as part of the more comprehensive series of national income and expenditure.

Other important suggestions made by the working Group are :

(i) Improvements should be made in the method of estimation of provision for depreciation. At present different procedures are being used in different sectors. Criteria and methods adopted should be put on a more rational and uniform basis. In this context the Group felt that the methodology now adopted for estimating capital consumption in agriculture is quite appropriate, and might be extended to other sectors also. It would, however, require building up of a comprehensive life table of physical assets in each sector and sub-sectors, based on detailed and painstaking analysis of physical assets.

(ii) Improvements are also called for in respect of estimates of investment in inventories. The present system of estimation of inventory in agriculture and trade for the household sector, linked directly to the increase in bank credit extended to this sector is unsatisfactory.

(iii) Some work needs to be initiated for understanding the various dimensions of what is often losely referred to as the 'paralled economy'.

(iv) The Reserve Bank of India (RBI) should continue its Company Finance studies with greater regularity, find more appropriate blowing up factors through regular censuses and adopt better sampling procedures for companies with relatively small paid-up capital. The RBI should also continue its studies on foreign controlled rupee companies.

(v) Regarding preparation of estimate of capital formation and saving at the regional level, the Group supported the recommendations of the Regional Accounts Committee appointed by CSO in 1972 and desired their speedy implementation.

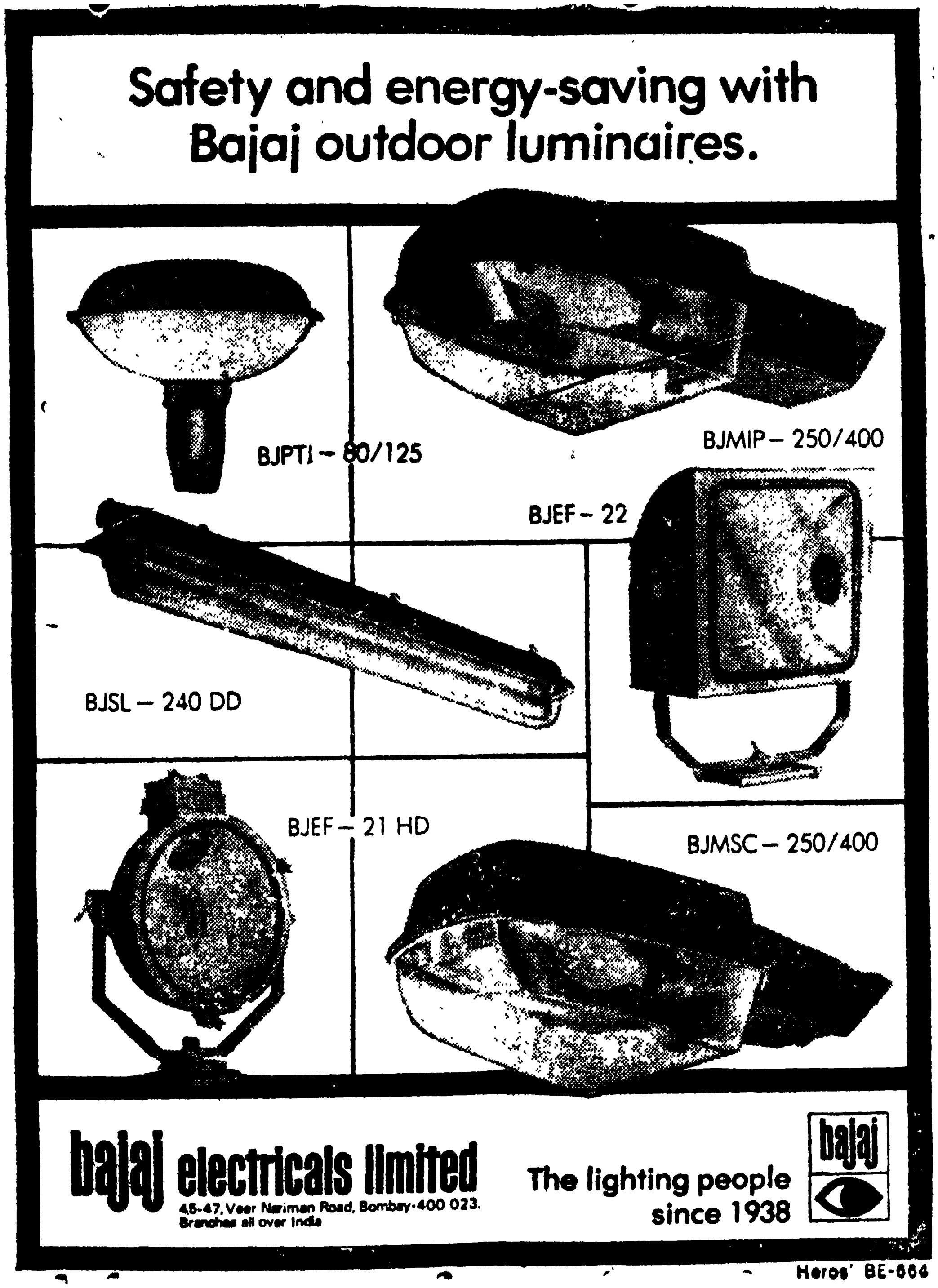
(vi) Steps should be taken to ensure that the estimates released by the CSO and RBI do not show any discrepancy other than those caused by differences in time of preparation of publication of their respective series.

While giving an overall assessment and interpretation the Group is of the view that there is no reason to doubt that there has been a substantial increase in the rate of domestic saving (at current prices) over the last quarter of a century. The sharper increase observed in recent years could, however, be due in part to transient factors, and in the absence of a more detailed analysis it is premature to draw any other conclusion on this basis.

Moreover, on account of the higher rate of increase in the prices of capital goods during this period, and the decline in the rate of inflow of foreign saving from the end of 1960's, the increase in the rate of fixed capital formation that has been achieved has been necessarily more modest in the 1970's. However, some members felt that the above interpretation over-shadows the notable effort which was made to raise the rate of capital formation in the country in the difficult period of 1970's. They also held the view that in respect of rise in savings the Report has over-emphasised the impact of transient factors and laid little stress on the fact of its buoyancy.

(Continued from page17)

During the management traineeship segment (MTS) the students work in different rural producers' organisations ob-the-job in different functional areas and also undertakes specific projects. MTS is intended to expose the students to practical problems in functional areas, besides having them to undertake specific projects of an inter-disciplinary nature. MTS gives the students opportunities to apply their conceptual knowledge and abilities in tackling operational problems under faculty guidance. Programme in Rural Management draws on the disciplines : mathematics and statistics, computer science and operational research, economics, psychology, sociology and other social sciences. Programme in Rural Management develops an understanding of contextual realities in : rural environment, communication, interpersonal behaviour, agri-business system, economic and socio-political systems, statutory regulations, rural development projects. Programme in Rural Management seeks a systems approach to : co-operative management, development administration, integrative rural management. □



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Underutilisation of resources affects Bihar agriculture

In Bihar 113 *lakh hectares are being cultivated and* 27 *lakh hectares have irrigation facilities. In* 1980-81 *the State produced* 106 *lakh tonnes of foodgrains. For* 1981-82 *the target is* 116 *lakh tonnes. But the total requirement of foodgrains of the State is* 130 *lakh tonnes. The State has been implementing various schemes to improve the agricultural front by introducing high yielding varieties of seeds, modern methods of cultivation, supplying fertilisers and so on.*

B. RAI

IN BIHAR gross area under cultivation is 113 lakh hectares. The net sown area is 84.6 lakh hectares. Orchards are in 2.2 lakh hectares and the pasture and grazing lands are in about 1.6 lakh hectares. Forest area is in 28.4 lakh hectares. The intensity of cropping is 1.34. The gross irrigated area is about 27 lakh hectares. With this agricultural infrastructure, the state produced a total of 106 lakh tonnes of foodgrains during 1980-81. The target of food production during 1981-82 has been set at about 116 lakh tonnes. The total requirement of food grains has been estimated at 130 lakh tonnes. The production of pulses during 1980-81 was 7.72 lakh tonnes. The pulses requirement of the State was estimated at 35 lakh tonnes. The state is presently producing only one-third of its pulses requirement. The total oil requirement has been estimated at 2 lakh tonnes. Against this requirement, only 30 thousand tonnes (i.e., about 15 per cent of the requirement) is being presently produced. Bihar needs 104.3 lakh tonnes of sugarcane. But the present production is less than half of its overall requirement. On the basis of 10 ounces per day, per individual the milk requirement of the state comes to about 274.2 lakh litres. The present production of milk is about 50 lakh litres. The state owned dairies process only about 2.2 lakh litres of milk per day which is about 4 per cent of the total milk-production. The production of eggs is about 16 lakh per day against the total requirement of about 350 lakh. The production of meat is about 60,000 tonnes against the total requirement of over 3 lakh tonnes.

Bihar has extensive inland fisheries resources (80,000 hectares of water area). But it contributes only 0.6 lakh tonnes which is about 8.5 per cent of the total fish production of the country from the inland sources. Taking 50 per cent of the population to be fish eating the total requirement of fish for the state by 1985 is expected to be about 2 lakh metric tonnes. Presently, the State is producing about less than one third of its overall requirements of fish.

Though endowed with abundant human, water and land resources the average yield levels and rate of growth of agricultural production have considerably lagged behind in the State. The reasons primarily relate to the managerial problems of water, land and human resources and comparatively less utilization of the new scientific knowledge in increasing and upgrading the levels of the agricultural production.

As indicated before, the development and transfer of field-oriented production technology is the first step towards increasing agricultural production. In Bihar, rice fills the bread basket of the State. It is grown in over 55 lakh hectares which is about half of the total cropped area. To increase the productivity of this crop, recently a number of new varieties (Sita, Deepa, Archana, Pankaj, Rajendra Dhan 201, 202, 401, 501, etc.) besides many other established ones, have been pushed into the production programmes. Efforts are being made to increase the productivity of the summer rice and 'Kharuhan' transplanted rice under post-flood conditions in North Bihar districts. A new variety 'Janaki' has now been much liked by the farmers for cultivation under medium deep water paddy conditions in North Bihar. The coverage of high yielding varieties (HYV) in rice, however, is about 25 per cent, but the coverage of HYV in wheat is quite good i.e., above 90 per cent of the total wheat acreage in the State. The varieties grown and suggested for the commercial wheat production in Bihar are now Sonalika, HP-1102, HP-1207, UP-262 and C-306. In many parts of Bihar, rice-wheat rotation is now becoming popular. Because of the high and stable yield levels the area under rabi maize is increasing. As against the State acreage of 10 q|ha; the acreage yield level of rabi maize is 21.6 q|ha. The farmers have picked up the new technology of growing rabi maize under assured irrigation and are considerably benefiting from its production-advance. Once branded as conservative in utilizing fertilizers in crop production, many a farmer in Bihar are now giving 60 to 80 Kg nitrogen per hectare in producing this crop. As is now well known, as against, the average of 31 kg|hectare consumption of plant nutrients in country, Bihar uses only about 16 kg|hectare and rice receives seldom more than 6-7 kg|hectare—on a statewise average figure. Since there is considerable shortage of the genuine seeds of 'Hi-starch' hybrid at the planting time, a large number of farmers are planting the seeds of the improved composite varieties. The University at Pusa (Bihar) has developed two such composites Suwan and Lakshmi. Suwan is good for growing in the Kharif season. Lakshmi is now becoming popular with the rabi-maize growers. For increasing the pulses production, the seeds of mung varieties *Pusa Baisakhi, Amrit, 12|333, Sunaina; Urd varieties*, Navin, Type 9 and Arhar varieties Bahar, Basant, Lakshmi are in good demand. For increasing the oil seeds production in the State, the bold-seeded mustard variety, Varuna has been found to be useful. As against the State average of 5 q|ha, this *variety has given 15 to 20 q|ha in the farmers' fields* in good crop management conditions. It is also envisaged to extend the area under groundnut as a spring|summer crop in Kosi Command Area (Saharsa, Madhepura and Purnea districts) and as a component of mixed crop culture with kharif maize in North Bihar. The cultivation economic indicate that if one gets a net profit of Rs. 4,000 from one hectare of kharif maize, he can as well have Rs. 7,000 per hectare from the same land by introducing the groundnut as mixed cropping with kharif maize, which is, otherwise now becoming a risky crop. There are also, good possibilities of growing Til as a summer crop in this State.

Though Bihar is deficit in major food crops, its fertile north Bihar is bestowed with nature's gift of perpetual greenery and good weather for successful crop production. It grows and exports a number of commercial crops to others states. Some of these crops are tobacco, chillies, sweet potato, Makhana and the luscious litchi. Bihar earns each year a revenue of about Rs. 25 crore from tobacco. The total acreage of this crop in the State is 16,000 hectares out of which about 13,000 hectares is in north-Bihar. About half of its total production is being marketed to the other States. For commercial cultivation of this crop, new improved varieties Sona, Gandak Bahar, and Prabha have been observed to be promising. In recent years growing of tobacco in between the two rows of 90 cm planted sugarcane has been observed to be economically profitable. Tobacco vacates the fields after five months and thereafter the sugarcane grows well. It is estimated that this technique could give a net profit of Rs. 4000 to Rs. 5000 per hectare in the farmers' fields. This technology is now being demonstrated in the farmers' fields for its large scale adoption. In sweet potato, evolution of a new weevil resistant variety Rajendra Sakarkand-5, and the introduction of a two tier cropping of 'RS-5' and 'Cross-4', varieties in alternate rows in the farmers field has given a new impetus in increasing its production. In this crop, however, now there is a need to find out large scale usage for the cheaply available tubers on commercial scale for food, feed or extraction of starch.

Litchi and Makhana are the pride of north Bihar. Litchi is still being grown with the traditional Shahi, **China, and other local varieties which usually** have a short span of fruiting season. Though, there is good potential of increasing the productivity of this crop, not much technological development and research input has gone in enhancing its production levels. The traditional areas of Darbhanga, Madhubani and Sitamarhi districts are growing the Makhana, a water crop in its traditional way and exporting the bounty of this crop to other states. Now Rajendra Agricultural University, Pusa is planning to initiate some research efforts for increasing its production.

Large part of agriculture in plateau region of south Bihar is rainfed. There are very limited resources of irrigation. The advances in the technology of dryland agriculfure provides a good omen for the well being of the farmers in this region. As a consequence of coordinated research efforts, a field oriented technology for obtaining 2.5 tons|hectare has been developed for ragi (madua) which is the mainstay of life of the tribals of the plateau region. There are as well good possibilities of growing groundnut and soyabean **in this area. However, the soil is slightly acidic and ap**plication of lime has been observed to be helpful in increasing the seed yields of these crops. During rabi, most of the fields are kept fallow. However, it has been now observed that just after harvesting kharif crops, dryland crops like linseed, gram and safflower could be grown successfully on the residual soil-moisture. This technology is now being demonstrated in the farmers fields through an operational research project.

To tackle the location-specific problems of plateau region, recently Birsa Agricultural University has been established at Ranchi with a mandate to foster the location specific research on agriculture, agro-forestry and for livestock improvement of this region. It is hoped, that in years to come, this University will rightly fulfil its mission, live up to its expectations, and become an instrument of the agricultural progress of this region. At least now, there is a good reason to be hopeful. ☐

The First Aspirin plant in Government sector

C. S. PILLAI

KERALA STATE Drugs & Pharmaceuticals Ltd. (KSDP) was established in 1974 in Alleppey with the production of several life saving essential drug formulations. The activities of the companf steadily increased reaching the production value of Rs. 430 lakhs in 1981-82. Today the company has 70 items of drugs in its range including antibiotic, antibacterial agents, Sulpha Drugs, Sedatives, anti T.B. Drugs, Vitamin preparations, Dextrose and saline transfusions etc.

The Company has also entered the open market with brand name specialities. Currently there are nine such products in the market and four more are ready for launching. Another four products are expected to be launched during this year. The open market sales are presently confined to Kerala and the Company plans to widen this field into the adjoining States shortly.

The company has been making profit from the very first year of operations and the profitability is growing significantly from year to year. The company employs 328 personnel including 49 scientific and technical staff. It has very cordial industrial relations and the employees are the best paid in the industry in Kerala.

The company quality control is equal to the best in the country and it employs latest sophisticated testing equipment. All items of raw material, packing material and the finished products are subjected to rigorous testing to ensure that they conform to pharmacepcal standards. The company already has a Research and Development Laboratory. A new Research and Development Wing with an investment of nearly Rs. 50 lakhs is being set up at Alleppey and this is expected to be operational by the end of 1983. With the growth in the activities of KSDP, several ancillary units have also come up in Kerala to meet the requirements of raw materials, chemicals, packaging materials consumables and miscellaneous components.

In line with the drug policy of the Government, KSDP took up implementation of its first bulk drug unit for the production of Vitamin 'A' with technology from ROCHE Products India Ltd., Bombay. The project is fast nearing completion and is scheduled to be commissioned before the end of this year. One striking feature of this project is that it will start from Lemon Grass, a local forest produce of Kerala. When in full swing, the plant will produce 30 MMU of Vitamin 'A' Acetate and Palmitate and thus help to save sizeable amount of foreign exchange for the country. The Vitamin 'A' Project will employ about 200 people, including scientific and technical staff.

KSDP's second largest prestigious bulk drug venture is the ASPIRIN PROJECT, the foundation stone for which was laid by Shri K. Karunakaran, Chief Minister of Kerala, on the 16th September 1982. The Aspirin Project involves the basic manufacture of Salicylic acid, Acetyl Salicylic Acid (Aspirin) and Sodium Salicylate. The plant will have a capacity to produce 1000 tonnes of Salicylic Acid, 1000 tonnes of Acetyl Salicyclic Acid (Aspirin) and 250 tonnes of Sodium Salicylate per annum. Salicylic acid will be purified through a sophisticated sublimation process and the sublimed Salicylic Acid will be used for the manufacture of the purest form of Aspirin.

The technical know-how was selected after a worldwide search for the best available. M|s. Tenneco Chemicals, Inc., New Jersey, a leading manufacturer of Salicylic Acid in the USA is providing technology for the manufacture of Salicylic Acid and Sodium Salicylate while M|s. Norwich Eaton Pharmaceuticals, Inc., New Jersey, USA., one of the most outstanding manufacturers of Aspirin will provide their latest technology for the manufacture of Acetyl Salicylic Acid (Aspirin).

Aspirin production in the country has all along been a monopoly in the hands of one private sector unit and recently another private sector unit has also started production in a smaller-scale. KSDP's Aspirin Project is the first one to be undertaken in the Public Sector.

Project site has been selected at Kazhakkoottam near Trivandrum covering an area of 32 acres with a canal on the rear side. The effluents from the plant will be treated to comply fully with the requirements of the Pollution Control Board.

The project is estimated to cost about Rs. 655 lakhs with a foreign exchange component of about Rs. 80 lakhs for certain critical equipment and instruments and expected to be commissioned in 1984 with an employment potential of 200 persons. When in full production, the project is expected to help save foreign exchange of more than Rs. 2.5 crores every year and the import of superior grade (USP) Salicylic Acid and Aspirin could be avoided.

With the commissioning of the Vitamin 'A' Project and later of the Aspirin Project, it is expected that the company, with a large work force and with a turnover of nearly Rs. 20 crores, would be a pride of the State.

Tapping the rural talent, the Rakhiyal style

MRS. KAMALA KUMAR

RAKHIYAL IS A SMALL VILLAGE in Dehgam Taluka of Ahmedabad District. It is covered by ICDS Project. There are about 150 Anganwadi workers, 12 Mukhya Sevikas under the CDPO.

In July 1981 Lalbhai Group Rural Development Fund started in-service programme for Mukhya Sevikas and Anganwadi workers. The programme was mainly planned to help the functionaries to understand their role and effectively implement ICDS.

The programme was conducted in a phased manner for six months. Each batch had 30 to 35 anganwadi workers and training duration was only for two days. The training was highly participatory in nature. The programme was completed in November 1981.

In January 1982 one of the Mukhya Sevikas who underwent in-service training formed a Mahila Mandal at Rakhiyal village. The Mandal had a membership of 100 to 180 women. Each one paid a fee of Re. 1|- per month. It was agreed to have a three day extension programme for the members of the mahila mandal in April, 1982. The objectives of the programme were :

(a) To enable members to know the various schemes that are available for economic and social development.
(b) To teach them a simple craft like candle making.
(c) Nutrition receipe demonstration and fruit preservation.

The Project Officer of LGRDF suggested that they levy a fee of Rs. 5 per participant for the three day programme as it would help in regular attendance. also explained that the money could be kept for mandal activities.

The Project Officer and her team contacted the State Social Welfare Board, Women's Economic Development Unit, Gujarat State Council for Child Welfare, State Khadi Board, Jyoti Sangh and Bharatiya Grameen Mahila Sangh—Gujarat Branch.

The programme was conducted as scheduled in April, 1982 at the primary school, Rakhiyal. About fifty women registered for the programme and attended for 3 days.

During the programme LGRDF also arranged slide show on health care.

In July 1982, the president and secretary of the Rakhiyal Mahila Mandal came to Ahmedabad to meet the Project Officer and brief her about the progress they had made. Project Officer was informed that :—

(1) The Mahila Mandal had been registered.
(2) Two Balwadies with a strength of 35 children in each have been started since June 1982, with a grant from the Gujarat State Council for Child Welfare.
(3) Director, Women's Economic Development had agreed to help in starting a tailoring unit.
(4) Khadi Board agreed to help them in the candle making. It was agreed to organise a five day programme for members to learn items like biscuit, toffees, phenyl making, etc.

The children in Balwadies get good snacks. Each child pays a fee of Rs. 2. There are 12 children from Scheduled Castes.

This experiment has proved that there is a lot of talent and leadership in the rural areas. One has to identify such talent and mobilise it for the benefit of rural women. If the programmes are interesting, women come to attend.

Improving utilisation of irrigation potential

An outlay of Rs. 864.77 crores has been allocated for the Centrally sponsored Command Area Development (CAD) Programme in the Sixth Five Year Plan. This consists of Rs. 564.77 crores under the State sector and Rs. 300 crores in the Central sector. In additional, an amount of Rs. 110 crores is expected to be available from the institutional sources. The bulk of the Central sector outlay, (Rs. 299.1 crores) would be disbursed to the States as Central assistance on matching basis under the approved pattern of financing the CAD programme.

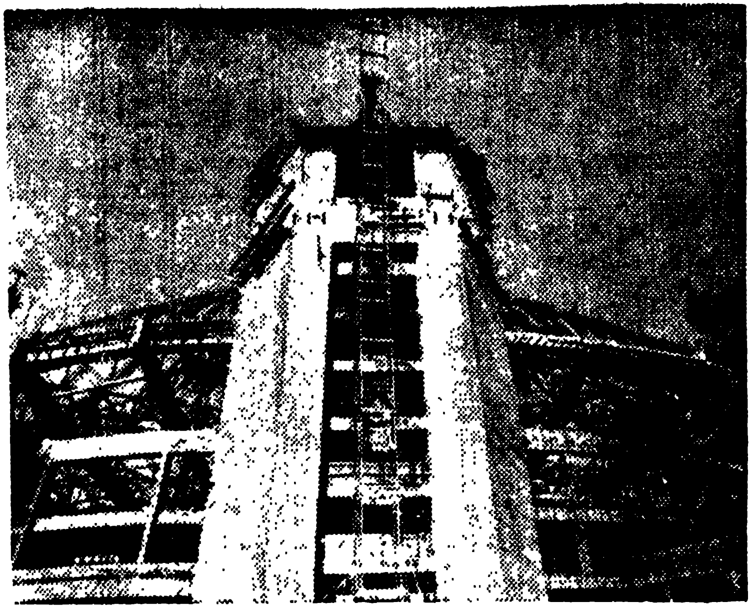
The Sixth Plan envisages coverage of four million hectares by construction of field channels and about one million hectares by land-levelling and shaping.

GEFC loans for generating employment

The Gujarat State Financial Corporation (GSFC) at its Board and Executive Committee meetings convened at Ankleshwar in the backward district of Bharuch for the first time, sanctioned loans of Rs. 192 lakhs to 18 units which will generate investment of Rs. 484 lakhs and employment opportunities for 497 persons.

Amongst these, projects contemplating to manufacture watch straps and bracelets, leather board being used in footwear, refined lubricating oil and purses will be located at Ankleshwar itself. An offset printing press coming up at Bharuch is also sanctioned term finance by the GSFC.

TISCON



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Remarkable comeback by Kerala workers rendered jobless

The condition of the Beedi Workers of Cannanore District have been improved since the implementation of 'Beedi and Cigar Workers Act' in October 1968. *The Kerala Government had set up Beedi making units on co-operative basis and the services of the workers were sought. Presently* 25,000 *persons work in the* 20 *primary societies. Each person earns Rs.* 10-12 *per day. For the first time beedi workers started getting paid holidays on festivals and important days. Maternity benefits to women workers at the rate of Rs.* 250 *has been given from* 1974. *Last year bonus was paid to the workers at the rate of* 10.75 *per cent.*

G. K. PANIKKAR, IAS (RETD.)

BEEDI WORKERS of Cannanore district have for decades, the expertise in beeedi making in our country. To make use of the same, employers from Karnataka set up their beedi units in Cannanore. The "Beedi and Cigar Workers' (Conditions of Employment) Act" came into force in 1966. This has been considered the *Magnacarta* by the beedi workers of Kerala. The Government of Kerala decided to implement the Act during October 1968. The Act envisaged the abolition of contract system, besides various financial obligations stipulated on the part of the employers. So prominent beedi manufacturers in Cannanore District, as Ganesh, Bharath, Durbar, PVS, who had their factory units in the district for over 50 years, abruptly closed down their factories and left the State. More than 12,000 families in the District depending on this industry, lost their employment. The very economy of Cannanore district had a shake. The Kerala Government moved briskly. A series of meetings with the trade union leaders were held. The government formulated a scheme to organise the workers on co-operative basis. Twenty primary societies throughout the district with one Central Society were set up. The Central Society was asked to mobilise finance, make bulk purchase of raw materials (*tendu* leaves, beedi tobacco, labels etc.) and advance them to the primaries. The primaries in which the workers were members were to make the beedies. They were to sell the beedies to the Central Society, at an agreed price. The beedies were all to be under one brand-Kerala Dinesh Beedies—and the Central society alone were to market them. The Central Society and the primaries were to have nominated Board of Directors. The workers had no money even to take one share of Rs. 20 as they did not have work for weeks together. So the government directed that each worker should put in only Re. 1 and Rs. 19 were advanced as share capital loan, to be recovered later from their weekly wages. The government also sanctioned an initial loan of Rs. 7.10 lakhs to the Central Society.

THOUGH EXPERIENCED WORKERS were there, the infrastructure for the industry was not available. Building and premises for the Central Society, godowns, headquarters of primaries, work centres for each of the primaries, were hired. Each primary had to set up a minimum of 5 to 10 work centres, with provision for about 100 workers to sit and work. Drying chambers were constructed. Initially 3000 workers (out of the total 12,000 displaced) were absorbed and work only for 750 beedies per worker per day was given; that meant daily production of 25 lakh beedies. In the beginning two sizes of beedies (small and medium) were manufactured. Both were in packets of 25 and priced Rs. 0.25 per packet. The brand appeared in the market on March 1, 1969. With good prestige publicity and lot of public interest, the whole situation was viewed as a challenge against the social injustice shown by the vested interests. Within one month, 1000 more workers were recruited. The production per worker was also enhanced to 1000 beedies.

Paucity of funds crippled the efforts to procure raw materials. Vested interests, particularly, the erstwhile employers started all kinds of anti-propaganda. They even forecast the Waterloo of the scheme. By July 31, 1969 beedies worth Rs. 20 lakhs were stocked. To boost the sales, a gift scheme to give one match box free with every hank of 25 beedies was introduced. The programme clicked well and a substantial portion of the stock was sold. Presently 25,000 persons work in the 22 primary societies. Each person earns Rs. 10—12 per day. During the preceding year Rs. 700 lakhs had been distributed towards wages.

ALL THE PROVISIONS stipulated for the benefit of workers in the Act have been implemented. For the first time beedi workers started getting paid holidays on festivals and important days. The cooperative allowed one leave with wages for every 20 days of work. Maternity benefit to women workers at the rate of Rs. 250 has been given from 1974. Payment of bonus at the rate of 2.25 per cent was introduced during 1971. This rate has gradually increased and last year bonus was paid at the rate of 10.75 per cent.

The workers who could not raise even Re. 1 in 1969, have now an accumulated thrift deposit of about Rs. 1 crore with the cooperative. From this are paid advance loans to the workers upto 50 per cent of the deposit against each, to meet urgent expenditure as house repair, children's education, marriage, death of family members etc. Initially on the death of a worker, a nominal assistance of Rs. 101, was given. Later the Family Benefit Scheme was launched. Each worker was to put in Re. 1 every month. Whenever a death occurred, the Central Society would put in Rs. 1,000 to this fund, and an amount of Rs. 5,000 would be given to the legal heirs. From January 1977, Rs. 12,15,000 has been distributed to 243 families. Gratuity, provident fund and group insurance benefits were also introduced.

A NETWORK OF DISTRIBUTORS in Kerala, parts of Tamil Nadu and Karnataka, under a special scheme, distribute beedies in their own vans and get special commission. Vans carry display writings on Kerala Dinesh Beedi. They are to sell more than 30 lakhs of beedies a month. If they sell 40 lakhs, this special commission is available to them for all the 40 lakhs at Rs. 10 per lakh. Some distributors earn more than Rs. 7,000 per month by way of special commission only. Since October, 1969, Kerala Dinesh Beedi special, with high quality tobacco and leaves, mainly intended for V.I.Ps, was introduced.

Government advanced working capital loan of Rs. 7.10 lakhs, put in a total of Rs. 19.10 lakhs as shares in the Central Society and given Rs. 1.90 lakhs for 10,000 workers for taking shares. An amount of Rs. 5 lakhs as aid to meet huge publicity expenditure during 1972, and 1975 was granted. In March 1979 Central Subsidy of Rs. 1,18,896 for the land and building purchased and the godown, building etc. constructed, was granted. A dividend of Rs. 24,730.60 upto 1979-80 was paid to the Government on the shares that they have taken in the Central society.

The era of rented buildings and premises faded out. During 1976 a plot of 1.26 acres with a suitable building to house the office etc. was purchased in Cannanore at Rs. 2,85,000. Two big godowns valued Rs. 5,25,000 were raised. Three or four primary societies also purchased premises and constructed buildings.

THE LIFE AND FAME of the beedi in market depends upon its quality. At work centres, quality is looked after by a supervisor for every 100 workers even at the making stage. At the primary society level a foreman certifies the quality of the beedies of that particular society. At the Central Society also quality control cell checks the quality. Only then beedies are put on the market.

Purchase of raw materials and production of beedies witnessed six fold increase. Wages paid increased from Rs. 5 million to Rs. 70 million, an increase of nearly 14 times over the years. The wage rate has been increased from Rs. 3.30 in 1969 to Rs. 10.12 for 1000 beedies in 1981.

Kerala Dinesh Beedi Workers Central Cooperative Society is a unique enterprise of Beedi Workers in India. ☐

1983-84 Annual Plan of J & K approved

Jammu & Kashmir will have an Annual Plan size of Rs. 185 crores during 1983-84, representing a step-up of more than 10 per cent over the current year's plan outlay.

Rajasthan Annual Plan

Rajasthan will have an Annual Plan size of Rs. 401 crores during 1983-84 as compared to current year's outlay of Rs. 340 crores.

Mizoram Annual Plan 1983-84 outlay fixed

Mizoram will have an annual plan size of Rs. 34.35 crores during 1983-84 as compared to Rs. 29 crores outlay of current plan.

Annual Plan 1983-84 of Manipur

Manipur will have an Annual Plan of the size of Rs. 51.25 crores during 1983-84 as compared to an outlay of Rs. 48 crores during the current year.

This was agreed to when the State Chief Minister, Shri Rishang Keshing, met the Minister of Planning and Deputy Chairman, Planning Commission, Shri S. B. Chavan, in New Delhi recently.

All-round improvement in heavy industry units

In response to the Prime Minister's call to observe 1982 as the year of productivity, Public Sector Manufacturing Undertakings under the Deptt. of Heavy Industry have registered an all-round improvement in performance for the second year in succession. Total production of these PSUs which increased from Rs. 1302 crores in 1980-81 to Rs. 1615 crores in 1981-82, representing a growth of 24 per cent, is expected to further improve by about 20 per cent during 1982-83. These undertakings had turned the corner last year (1981-82) by making a profit of Rs. 18.38 crores against a loss of Rs. 50.12 crores in 1980-81 and are on their way to make a profit of about Rs. 60 crores in 1982-83. Consistent with improvements in production a profitablity, efforts were directed towards quality improvement, technology upgradation and energy conservation.

Fostering team work and spirit of sportsmanship

GIANI ZAIL SINGH while inaugurating the East Centre of the Netaji Subhas National Institute of Sports in Calcutta recently said: "As a result of the successful holding of the Asiad 82 and the various steps taken by Government and various sports organisations, the public awareness of the value of sports has grown. More and more people in the country are getting emotionally involved in the performance of our teams in international competitions. Therefore, no efforts should be spared in improving our sports performances. The National Sports Federations, the State Government, Netaji Subhas National Institute of Sports, the All India Council of Sports and the Department of Sports at the Centre have all to play an important role in achieving the national objective of sports promotion.

The importance that the Central Government attaches to the promotion of sports and the raising of sports standards in the country can be judged from the fact that it has set up a separate Department of Sports and incurred substantial expenditure on creating infrastructure and facilities of international standards for Asiad'82, which are now available for the youth of the country. It is necessary that these facilities and infrastructure are well maintained and put to optimum use.

State Governments have a special responsibility for the promotion of sports in their respective areas and for providing necessary sports facilities in educational institutions as well as for the general public. I am very happy that for setting up the East Centre of Netaji Subhas National Institute of Sports, the Government of West Bengal had developed the Salt Lake area, provided funds for the creation of required sports facilities, and is also facilitating the construction of a big Football Stadium with a capacity of more than one lakh in its vicinity. I hope that this Centre will go a long way in fulfilling the long felt sports needs of the people of the eastern part of our country. I have no doubt that steps will be taken to see that not only more sports infrastructure and facilities are provided to meet the growing needs of our young men and women but also that these facilities are well looked after and put to continuous and proper use in the future.

Sports have importance not only for the children and young people, but for people of all ages. Sports help to keep one's body healthy and fit till the last day of one's life. It is the law of nature that a sound mind in a sound body. Therefore, sports are essential for maintaining physical and mental strength. A healthy body is an essential requirement for the proper development of one's personality. Sports foster team work and the spirit of sportsmanship. In sports it is not the victory or defeat that matters. In a democratic society the spirit of sportsmanship is very necessary, without it the environment gets polluted.

It is the spirit of friendship that is fostered in an environment of sports without giving rise to enmity between rival players. The same spirit should guide people in all walks of life, especially those participating in public life. Differences of opinion should not be allowed to lead to termination of friendship.

It is gratifying to note that people of India always stand united as one man in times of need. It is the team spirit only generated by sports that enables one to achieve the cherished goals in life. Therefore, it is desirable that Government should give to sports as much importance as possible. Healthy persons are an asset to themselves, to society and to the State.

With these words, I have great pleasure in inaugurating the East Centre of the Netaji Subhas National Institute of Sports and in dedicating it to the sportsmen and women of the country, in particular of the eastern region."

Helping the village women

SHIPA ZED

THE Rohtak Distt. Rural Development Agency of Haryana is laying special emphasis on the upliftment of village women through small development projects.

Presently, 725 women, mostly young, are getting training in various crafts; including embroidery, sewing, knitting, at 29 craft training centres spread all-over the distt. Besides giving practical training to women, these centres are also some sort of community gathering centres where trainees share their household problems and discuss other matters of their interest.

About 13 hundred women have been trained at these centres and they have also been provided sewing|knitting machines at subsidised rates. Besides these, 42 women are getting trained in various trades under Training of Rural Youth for Self Employment programme and getting a monthly stipend of Rupees one hundred. These trainees will get a machinery-box relating to their trade after completion of their training.

According to Mr. Krishnan Mohan Mehrotra, Chief Executive of this agency, the trained women will be assisted in getting loans from banks on easy terms for starting their own production units. This agency also helps these women entrepreneurs in marketing their products.

Besides providing employment, training finances and marketing facilities to rural women entrepreneurs of the distt., the agency also plans to revive the banishing folk traditions of the distt. through embroidery, etc. The rural women of the region are more hard working than men. While village men play cards, smoke hookah and indulge in political gossip, the women can be seen busy in the farm after completing their household chores.

Significant Impact of Antyodaya Programme

EVALUATION study of Antyodaya Programme has revealed that a sizeable number of selected beneficiaries acquired more income generating and remunerative occupation after their inclusion in various benefit schemes under the Programme.

The report by the Programme Evaluation Organization of the Planning Commission was released in New Delhi recently.

Antyodaya Programme for the upliftment of the poorest of the poor was launched first in Rajasthan on October 2, 1977. Himachal Pradesh, Orissa, Uttar Pradesh, Bihar and Manipur followed suit. The type of benefit schemes under the Programme in different States were : (1) land allotment, (2) agriculture and land development schemes, (3) animal husbandry, (4) village and cottage industries, (5) wage employment, in Rajasthan and Himachal Pradesh only, (6) old-age pension, in Rajasthan, Himachal Pradesh and Orissa only, and (7) housing subsidy, in Himachal Pradesh only. In addition, Rajasthan and Himachal Pradesh introduced a new type of total care of an Antyodaya family welfare scheme, like free education to the children of Antyodaya families, health care and legal aid, etc.

It was observed that Scheduled Castes and Scheduled Tribes including backward classes accounted for the highest coverage under the Programme varying from 60 per cent to 88 per cent in the selected States.

According to the PEO report, the acceptance of agricultural land had helped the beneficiary households in Rajashan, Himachal Pradesh and Orissa in shifting to cultivation from labour and other uneconomic occupations likewise, the old-age pension scheme had benefited others in these States to have regular source of income. The coverage of the Antyodaya families under self-employment schemes in these States and also in Uttar Pradesh and Bihar was instrumental in their adopting more remunerative occupations like dairying, goat|sheep rearing, cart drawing, rickshaw pulling and small trade, etc.

Change in consumption pattern

A positive impact on the consumption pattern of Antyodaya families was reported by the beneficiaries in many States. In Rajasthan, 93 per cent of the beneficiaries had reported improvement in food, cloth and standard of living compared to 52 per cent in Himachal Pradesh, 81 per cent in Uttar Pradesh, 44 per cent in Bihar and six per cent in Orissa.

Acquisition of assets

Although a large number of beneficiaries had reported increase in income, a very few of them had been able to acquire assets with the increased income, possibly due to short span of the Programme. In Rajasthan 18 selected beneficiaries had reported acquisition of assets. In other States (except 2 beneficiaries in Orissa), none of them had been able to acquire assets.

According to the report, a micro approach in identifying the poorest of the poor and delivery benefits at their door-steps according to their choice, skill and genius had earned a distinction. For the first time probably, cash was kept away from the beneficiaries and thereby scope of mis-utilisation was minimised.

The Programme had permeated very well in the villages and not only the beneficiaries but the general village community was aware of the nature of the Programme and its objective. This was possible because of the Gram Sabhas were closely associated with the selection process.

Role of banks limited

The role of banks in the financing of the scheme was found to be limited, except in Rajasthan and Western Uttar Pradesh. In Rajasthan, the Government had created a Risk Fund for the Cooperative Banks at the rate of 6 per cent of the loan actually disbursed by them. Out of this, two per cent was given to the Central Cooperative Banks and the remaining four per cent was allotted to village level societies. This had resulted in large coverage of families under cooperative fold in Rajasthan.

There was general problem regarding the follow-up service to the beneficiaries after the delivery of the benefits. Generally, they were left at the mercy of the existing departmental functionaries who were mainly located at the block headquarters. Due to lack of necessary supervisory staff it was not possible to keep contact with the beneficiaries for ensuring proper utilisation of benefits.

States' Annual Plan

Larger Plan Outlay for Nagaland

NAGALAND will have an Annual Plan size of Rs. 51 crores against the current Annual Plan outlay of Rs. 42.58 crores.

The State needs to step up agricultural production and has also to strengthen animal husbandry programme together with the strengthening of administrative machinery, specially the monitoring and statistical aspects, to achieve Plan targets. There was also need to minimise the losses of the Road Transport Corporation.

Annual Plan for Kerala

KERALA'S Annual Plan for 1983-84 will have an outlay of Rs. 320 crores, a step-up of Rs. 45 crores as compared to the Annual Plan outlay of the current year.

The mid-term review of the State Plan indicated delays and slippages in the implementation of irrigation and power projects.

Annual Plan of Delhi

THE 1983-84 Annual Plan outlay of Delhi will be of the order of Rs. 250 crores, an increase of Rs. 35 crores over the current Annual Plan outlay. Reviewing the performance of the current Plan of the Union Territory of Delhi, Shri Chavan said that Plant load factor of Delhi Electricity Supply Undertaking had increased, but the environmental aspect needed to be improved considerably. On resources he said that there was considerable scope for additional resource mobilisation by the Union Territory. This should be attempted without delay.

NEC Annual Plan outlay Rs. 95 crores

THE Annual Plan 1983-84 outlay of the North Eastern Council has been fixed at Rs. 95 crores against the current plan outlay of Rs. 81.86 crores.

The emphasis in the NEC Plan next year will be on power, transport and manpower development. Besides speeding up the implementation of the Kopli Hydro Electric Power, work will be initiated on the Doyang Hydro Electric Project in Nagaland. Also transmission and transformation schemes will be stepped up for supplying power of Kopli to other parts in the North East.

High priority will be given to the completion of the second bridge on the Brahmaputra and development of inter-State roads and roads of economic importance.

Annual Plan of Goa, Daman & Diu

THE Annual Plan size of Goa, Daman & Diu for the next year has been fixed at Rs. 56.60 crores including the expenditure incurred by the UT Administration on CHOG-M (Commonwealth Heads of Government-Meet). The current Annual Plan outlay is Rs. 44.12 crores, without CHOG-M.

In the Plan for 1983-84, emphasis has been put on irrigation, flood control, power and social and community services. The Union Territory will undertake intensive development of 12 watersheds consisting of (i) soil and water conservation and (ii) crop husbandry, animal husbandry, forestry and pasture development. The on going major and minor irrigation schemes in the UT are to be stepped up. In the power sector, work in Tivim sub-station, Ponda-Tivim Line, Xeldem sub-station, Ponda-Exldem line is to be stepped up and the second transformer at Ponda Station is to be commissioned.

Annual Plan of Arunachal Pradesh

ARUNACHAL PRADESH will have an outlay of Rs. 52.80 crores for the 1983-84 Plan, as compared to the current Annual Plan size of Rs. 44 crores.

The UT's Plan for the next year envisages increase of foodgrains production with a target of self-sufficiency by the end of the Plan. The horticulture, animal husbandry, fisheries and forestry programmes are to be speeded up along with rural water supply, minor irrigation and rural roads. In the power sector, more micro hydel schemes are to be undertaken, in addition to completion of the existing schemes. The UT Administration proposes to expand coverage of IRDP, NREP and Community Development programmes.

Tripura's Annual Plan

AN outlay of Rs. 58 crores has been fixed for the Annual Plan 1983-84 of Tripura, against the current Plan outlay of Rs. 50 crores.

In the State Annual Plan 1983-84 emphasis has been placed on rural and tribal development and employment programmes and in particular on crop husbandry, dairy development, health, rural electrification, minor irrigation, rural employment tribal councils etc. Good progress has been reported in pump energisation and minor irrigation programme and the State is also stepping up programmes in agriculture and animal husbandry sectors.

Economic Notes

Rise above parochial considerations President's call to the nation

PRESIDENT, Giani Zail Singh in his broadcast to the nation on the eve of Republic Day said :

Our Republic has chosen the path of planned economic development so that the benefits of freedom reach the common man. We have made commendable progress in the successive five year plan periods. The economy today rests upon a sound infrastructure supported by an ever widening scientific and technological base. The country's capability to feed, clothe and house the growing population has increased substantially. The quality of life today for an average citizen is much better than it was at the time of independence. The fact that this has been achieved within the framework of democracy and against heavy odds is an eloquent testimony to the inherent vitality and ability of our political and economic system. There is, however, no scope for complacency. Freedom is not complete as Mahatma Gandhi has told us, until we are able to wipe the tears from every eye. Nor can we rest content until we have achieved the eradication of inequality and caste consciousness, in consonance with the message given to us by the Father of the Nation. In the accomplishment of this task, the active cooperation of one and all is needed. The country needs more production. Our economy must attain the tempo of self-sustaining growth. I appeal to all people engaged in the fields, factories, laboratories, educational institutions, government offices or any other sphere of activity to work with vigour and devotion for the success of this endeavour. Let us not fall prey to disruptive influences and weaken the nation's resolve to march ahead. Let us not also do anything which may frustrate the youth by diverting their energies from constructive channels.

We have inherited a rich and composite cultural heritage, to which contribution has been made, over the centuries, by people professing different faiths, following different customs, and speaking different languages. It is our sacred duty to preserve and enrich this precious heritage based on mutual respect and toleration, trust and goodwill, sacrifice and service to humanity. This indeed has been the basis of our national unity. No nation can be strong unless it is internally united. Let us rise above narrow and parochial considerations and prove ourselves worthy of our noble traditions and live up to the teachings of our seniors, saints and gurus, who have throughout our history given us the message of unity, love and goodwill.

Communication terminal keeps "M.V. Polar Circle" In touch with India

A satellite communication terminal installed abroad the ship 'M. V. Polar Circle', currently in the Antarctica, has enabled the ship to maintain constant and clear communication with mission control room at the National Institute of Oceanography, Goa.

Designated SATCOM MX 211, this equipment manufactured by Magnavox Advanced Products and Systems Company, U.S.A., world leaders in satellite navigation and communication systems, was supplied by Larsen & Toubro Limited (L&T), which represents Magnavox in India.

The satellite communication terminal, being used by India for the first time, provides ship to shore, shore to ship, and ship to ship communication for telex, telephone and high speed data transmission. In addition, safety at sea through priority distress signalling is provided.

Khosla as Executive Director IDBI

Shri Satya Dev Khosla has been appointed as Executive Director of Industrial Development Bank of India.

National Policy on Small Hydro Stations Urged

THE two-day Seminar on Small Hydro Electric Stations concluded in New Delhi recently has emphasised the need for having a national policy on the development of small hydel stations, specially keeping in view the power requirements of the people in remote areas. As most of the hydro electric projects are generally in interior hilly areas, and very small habitations special priority in funding the schemes and measures for speedy execution has to be given, the Seminar has observed. The Seminar has suggested that organisational arrangements for development of small hydel stations may be jointly taken up by the State Electricity Boards and Irrigation Departments. Local participation wherever possible may be enthused through suitable incentives for execution and operation of small hydel schemes.

Improved performance by Public Enterprises

THE Public Enterprises have shown a considerable growth in investment, gross profits and the sales during the first six months of the current financial year. The financial performance has improved and higher achievements in the near future are indicated. In 1982-83, the capital employed has gone up to Rs. 24,000 crores from Rs. 21,126 crores in 1980-81, showing a percentage increase of 13.6. The gross profit has increased from Rs. 1421.99 crores in 1980-81 to Rs. 2482 crores in 1981-82. During the current fiscal year ending September, 1982, the gross profit was higher by Rs. 400 crores compared to the corresponding period in 1981. The gross profit as a percentage of capital employed registered a rise from 7.8 per cent in 1980-81 to 11 per cent in the first half of 1982-83. The volume of sale went up to Rs. 36,000 crores in 1981-82. The internal generation of resources for the period April-September, 1982 was Rs. 1300 crores as against the target of Rs. 1673 crores for the full year 1982-83.

Rural drinking water to three Eastern States

THE Ministry of Works and Housing has released an amount of Rs. 1,044.50 lakhs to the three eastern States of West Bengal, Assam and Orissa for execution of schemes approved under the Centrally Sponsored Accelerated Rural Water Supply Programme. This represents the second instalment of grant-in-aid for 1982-83 and for meeting the expenditure for M&I Units in these States.

In this release the largest amount of Rs. 468.50 lakhs has been given to West Bengal which received Rs. 425 lakhs in the first release. The minimum target for the State has been fixed to cover 4,025 identified problem villages.

Assam gets Rs. 348.98 lakhs whereas the first release to this State amounted to Rs. 235 lakhs. The minimum target for Assam will be coverage of 1,902 identified problem villages.

The present release to Orissa amounts to Rs. 227.02 lakhs while the first release was of Rs. 370 lakhs. The minimum target for Orissa will be coverage of 2,280 identified problem villages.

States to step up drinking water supply

THE one-day Conference of State Ministers, Secretaries, Chief Engineers and Heads of Implementing Agencies in charge of Water Supply and Sanitation held in New Delhi recently has through a resolution, called upon all States Governments and Union Territory Administrations to take urgent steps to provide at least one source of safe drinking water to all the identified problem villages during the remaining period of Sixth Plan. They have also been asked to make earnest efforts to increase the availability of funds for this programme.

The resolution says that emphasis should be given to low cost schemes involving sanitary wells and tubewells with handpumps wherever feasible, both in order to expand the coverage with existing outlays and also to avoid the problems of power shortage and maintenance.

Significant contribution in computer maintenance

Computer Maintenance Corporation (CMC), the largest and fastest-growing computer service organisation in the country, is the only one-point computer support organisation in India. During 1982, it extended maintenance support to large computer systems installed in crucial sectors like space research, education, defence and power.

BHEL performance improves

A cheque of rupees 10.39 crores, representing 6 per cent dividend declared by BHEL for 1981-82 on equity capital was ceremoniously presented to the President, Giani Zail Singh, in New Delhi on 11th January 1983. BHEL substantially improved its performance during the financial year 1981-82. The out-turn went up by 18 per cent to Rs. 9.30 crores over the previous year and pre-tax profit to Rs. 51.7 crores from Rs. 37.5 crores in 1980-81.

Each one Teach one in Sikkim

IN Sikkim, the number of teachers has risen from 1000 in 1975 to 3500 today and the number of students enrolled had increased from 20,000 to over 65,000. This was disclosed by Shri J. H. Taleyarkhan, Governor of Sikkim who was Chief Guest at the Annual Convention of the Teachers' Training Institute (T.T.I.) held at Gangtok recently.

Safety Award for NFL Nangal

THE Nangal Unit of the National Fertilizers Limited has been awarded a Silver Shield by the Punjab Government for its longest Accident-free working during the year 1980. The factory worked for 3.04 million man-hours without a lost-time accident during the period.

The Nangal Fertilizer Factory has the distinction of bagging a large number of International, National and State Safety Awards for its outstanding safety performance since it went into production in 1961.

National Entrepreneurship Board to set up

THE Ministry of Industry has decided to set up a National Entrepreneurship Board to provide an apex organisation to give a big boost to entrepreneurship development as an alternative strategy of employment. The Ministry is also formulating a National Award Scheme for meritorious small scale entrepreneurs for motivating the entreprenurs to set up small units in the country.

The small scale industries sector has grown phenomenically over the years and accounted for about 23 per cent of the total exports from the country during 1981-82 and registered a growth rate of about 10 per cent in production and 5.6 per cent in employment.

Power Targets for 1982 exceeded

THE power generation of 11619 million units in the country during the last month of 1982, an all time high by itself, has taken the overall power generation of the year well beyond the target. The total generation for 1982 comes to 129.919 billion units against the target of 119.5 billion units.

The thermal generation for December 1982 was 14.6 per cent more than the previous month's figure and 19.5 per cent more than the figure for December, 1981. This was achieved by better utilisation of thermal power plants. The increase in thermal generation more than off-set the fall in hydro-power generation due to poor water availability in many important reservoirs. The steady increase in power generation has contributed to the gradual reduction in the gap between supply and demand.

Success Story

A good teacher

SRI NARAYANA REDDY is an unassuming school teacher in Bannerghatta village (Anekal taluk of Bangalore district) where he is working as Head Master. He has faith in doing good deeds but not in lengthy talks. When he started his career as a teacher in the nearby village called Hulimangala, Mr. Reddy saw a piece of vacant land adjacent to the school. It was not possible to convert it into a playground, so he planted a few firewood trees there. After careful rearing for a few years, these trees have fetched about Rs. 1500 to the school. Steel Almirah, a Radio set, water jug and other useful articles were purchased out of this amount. Then he was transferred to Bannerghatta as the Headmaster of Government Higher Primary School. The school building was in a dilapidated condition. Mr. Reddy had to take immediate measures for the safety of the building. He went to every parent in the village with a request for help. His approach was so convincing that the villagers volunteered to take up the repair work. The whole building got a new facelift. In addition to this, a fence around the school was put. An estimated amount of about Rs. 6000 was spent for all these works. The whole amount was donated by the villagers voluntarily.

The school children have laid a small garden in the school premises. Mr. Narayana Reddy has been unanimously elected as the Secretary, Bannerghatta circle of Primary school teachers. Mr. Reddy is not inclined to boast of his achievements but he agrees "Where there is a will, there is a way".

V. S. Suryanarayana

The best gram panchayat

HARAGADDE is a small village on the roadside in Anekal taluk of Bangalore district. The village Panchayat has taken up almost all the rural development work and implemented them with a firm determination. The conscientious efforts of the village panchayat were duly recognised. This Panchayat was judged as the best panchayat in Bangalore district in 1981-82. A cash award of Rs. 300 was given to the Panchayat. There was a divisional level competition of the panchayats. The selection of the best Village Panchayat was based on the following criteria.

(a) Utilisation of 18 per cent grants meant for the welfare of Harijans.

(b) Efforts made incradication of untouchability.

(c) Taxes levied and collected.

(d) Steps taken for creating permanent, remunerative assets to the village panchayat.

(e) Other special activities.

Haragadde Panchayat has fully utilised the 18 per cent grant for laying drainage system to the Harijan colony and providing street lights. New taxes to the tune of Rs. 10,550 were levied and Rs. 7919 has been collected. There is no practice of untouchability in the village. Apart from the panchayat building, a row of shops and a silk-worm rearing centre have been constructed by the panchayat. Shops and centre fetches about Rs. 400 as rent every month.

A divisional level judging committee has unanimously declared Haragadde Village Panchayat as the best panchayat in the revenue division of Bangalore and awarded a cash prize of Rs. 1000 in the form of NSS certificate. Thus the panchayat has earned a distinction for its dedicated work. The panchayat is being headed by an engineering graduate Mr. Basavaraj with Sri Seetharamaiah, a devoted panchayat Secretary to assist him.

V. S. Suryanarayana
Field Publicity Officer
Mysore

Kaku's Temple

KOUGH, a tiny village, in Billawar block of Kathua district, J & K State, is maintaining its glorious traditions of brotherhood. The village temple of Lord NARSING, is being run by a Scheduled Caste, Shri Kaku Ram, weaver by profession Shri Kaku's ancestors had also been looking the holy temple for generations. The temple is open to all devotees irrespective of caste and creed.

Every year on 25th December, a big fair is held there and thousands of devotees mostly from Billawar and Basohli Tehsils of Kathua district gather here to seek the blessings of Lord NARSING and a mass 'Preeti Bhoj' is organised.

V. K. Magotra
Field Publicity Officer
Jammu

In P&T's service for 68 fears

Rev. Brother K. V. Peter, S. J. completed 68 years service to the Posts and Telegraphs Department as Extra Departmental Sub Postmaster at Shembaganur PO (Kodaikanal) in Tamil Nadu on 29-8-1981. In recognition of his service the Ministry of Communications, Government of India has waived the date of retirement and allowed him to serve this post office, as long as he is fit and efficient. Recently he was awarded 'Padma Shri' by the Government for his meritorius service to the people.

Marking the International Year of Aged in 1982, Directorate-General, P & T New Delhi has honoured him with a token award of Rs. 2,500. The Secretary, Ministry of Communications came down all the way from New Delhi to the remote village post office at Shembaganur in Kodaikanal hills on 22-12-1982 to see for himself, how best the post office has been maintained by Rev. Brother K. V. Peter S. J.

S. Subramaniam
Field Publicity Officer,
Tiruchirapalli

Books

Art of Rajasthan

'Art of Rajasthan' by Jogendra Saxena; Published by Sundeep Prakashan, Delhi; Price Rs. 18, pages 241.

AS RIGHTLY observed by the late Coomaraswamy, Indian women yet are the best conservators of Indian culture. This is more true in case of folk arts. Whether it is Rangoli of Gujarat and Maharashtra, Alpana of Bengal, Chauk and Alipan of Uttar Pradesh and Bihar or Kolam of South India or the Mandana of Rajasthan it is always an elderly woman of the family or community, may be unlettered or with little education, who would be found exercising her deft fingers to produce exquisite and intricate patterns on floors or walls on festive or auspicious occasions. The peedawn beautiful drawings outside a South Indian house are gradually disappearing for reasons well-known to us inspite of the stencils and perforated reeds being available to the younger generation. Mr. Jogendra Saxena's work on Mandana and Mehendi, the two domestic folk art forms of Rajasthan—the former meant for decorating the floors and walls and the latter for the palms of women—viewed in this context is a painstaking and priceless collection of a fast vanishing artistic heritage of our country.

The book is not merely a collection of designs of Mandanas and Mehendi it also delves into history, culture archeology, mythology, town planning, and tantra. The author's suggestion that the patterns and designs in Mandanas can be used or have been used in town planning could have been brushed aside as an exaggerated claim but for the support he receives from an authority like the late Dr. Vasudeo Sharan Agrawal. A little more attention to editing and proof reading would have removed the irritants one faces so frequently while going through it and would have added readers' delight to an otherwise valuable mirror of our traditional domestic art.

—S. N. Saxena.

Economic Growth during three decades

India's National Income 1950-1980—An analysis of economic growth and change by Dr. V. K. R. V. Rao. Sage Publications, New Delhi; 1983; 208 pages; Price Rs. 125.

THIS book is a pioneering attempt to study the process of economic growth in India through White Papers of the Central Statistical Organisation and other economic statistics published by different sources like Reserve Bank of India, National Sample Surveys etc. It starts with a discussion on the concept and data base and methodology of compilation of National Income. The growth in nominal and real Net Domestic Product (NDP) of the country and the changing structure of the economy, in sectors and subsectors is delineated. There are chapters dealing with consumption, savings, capital formation and inter-state variations in growth and national shares. For consumating the analysis, productivity and growth in the economy and scenarios of the future of NDP by the turn of the century are also included.

As the work is essentially in the nature of studying of the how and why of economic growth and progress, one finds many interesting conclusions (which are normally talked about) proved by statistics such as for instance, that the primary sector has gained most (or lost the least) from inflation accompanying growth in NDP; the main beneficiaries from price effects on agriculture are those having large holdings and cultivators of non-food crops; structural progress in NDP shares of primary, secondary and teritiary sectors is coupled with structural regression in occupational terms; perceptible change from subsistence to market economy and the increasing importance of manufactures in organised activity; rural consumption standards being better than urban ones; secular rise in capital output ratios in the economy; departmental and non-deparmental governmental activity outstripping public administration; secular trend towards reduction of inequality in both in inter-personal and inter-industry earnings per employee; importance of encouraging household savings; and the need for link between productivity and growth.

The author has presented not only the statistics and reached conclusions but as and when feasible has used it up as guide for future policy. This is an extremely useful work presenting a cogent well-knit macro-economic thesis. It is a painstaking effort to present the economy down to its sub-sectors as has been done in this book. None has attempted such a work so far. The book would seem to be high priced, but it deserves it not less by the weightiness of the subject dealt with than by the eminence of the author.

—R. C. Srinivasan.

Marketing Problems

Groundnut Marketing : A Study of Cooperative and Private Trade Channels by C. G. Ranade, K. H. Rao and D. C. Shah, Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad, pages 87+vi.

The book embodies the results of a research project to explore and evaluate the possibility of increasing the income of groundnut growers with the help of vertically integrated groundnut cooperatives. The Project, undertaken by the Centre for Management in Agriculture, IIM, Ahmedabad, was financed by the Union Ministry of Agriculture.

Two of the five chapters comprising the book related to groundnut marketing at macro and micro levels, and one chapter refers to vertical integration in cooperative marketing.

While the macro level analysis is done with respect to the movement of farm harvest prices of oil, oilcake, and deoiled cake during 1963—78 at all India level in four major groundnut growing states, the micro level analysis refers to 54 farmers selling groundnut in Kurnool and Ananatpur districts in Andhra Pradesh.

Although in years of low groundnut production, the increase in the oil prices are higher, the private trade and oil industry manage to maintain their profits in normal years. At the micro level the share of cooperatives in the groundnut marketing is not significant. As compared to the trade channel, the prices received by farmers through the cooperatives are not necessarily beneficial to them. Interlocking of the credit provided to farmers by private agencies also affects the business of cooperatives. There is not vertical integration in the groundnut cooperatives in Andhra Pradesh. The profits of cooperative oil mills can be further improved by removing the constraints on availability of adequate finance. The suggestions for reorganising groundnut marketing channels by introducing vertically integrated cooperative will involve considerable changes at various stages.

At some places, conclusions could be worded in a bettor way. Particular mention may be made of "Whenever groundnut .... year's profits" (p. 16) and "This implies that......... are also high." (p. 31.)

In the study, the cost of cultivation has been shown to include "only paid expenses plus imputed value of family labour and own bullock" (p. 33, 53 and 54) I believe that when comparing cultivation expenses on a number of farms other items such as land rent, interest and depreciation on fixed capital, value of seed and manure, etc.—whether purchased or provided by the farmer—should be included. Similarly, the calculation of net profits of vertical integration should take into account all the relevant factors.

Research workers engaged in marketing problems should find this book as well as Appendices giving information on groundnut production and other allied subjects useful.

V. S.

High priority to slum improvement

THE Ministry of Works and Housing is now giving high priority to the scheme for environmental improvement of slums which has been included in the new 20-Point Programme. Letters have been addressed by the Prime Minister, Smt. Indira Gandhi, as well as by the Union Minister of Works and Housing Shri Bhishma Narain Singh, to the State Chief Ministers for the vigorous implementation of the scheme through the provision of adequate funds, suitable administrative arrangements and constant monitoring.

The objective under the Prime Minister's Programme is to provide basic amenities like water supply, sewerage, sanitation, paved pathways and street lighting to about 10 million slum dwellers living in the urban areas by March, 1985.

Dispersal of small industries to backward areas

A review of small scale industrial units, set up in 1981 brings out the latest trends in growth pattern of SSI units which show substantial growth in the backward areas.

Out of the total of over 68,000 registered SSI units which went into production during 1981, more than 32,500 units or over 47 per cent of the new units were set up in the Centrally identified backward districts of the country. Nearly 7,000 units (10 per cent) were set up in the Zero-industry districts. Only 5 per cent of the new units came up in the city areas.

The position becomes all the more encouraging in the growth in the number of artisans units is also taken into consideration. Thus, 1,64,000 SSI units (including artisans units) constituting over 53 per cent of the new units came up in Centrally identified backward districts during the year 1981-82 through District Industries Centres. Of these, 36,000 units or 12 per cent of the total units were in the Zero-industry districts.

Agricultural development in the hill areas

THE HILL AFFAIRS Branch of the Development and Planning Department of West Bengal has sanctioned Rs. 20 lakhs for a number of scheme in the agricultural sector to be executed in the hill areas of Darjeeling. Under this scheme marginal farmers will be supplied with high yielding varieties of maize seeds together with fertilizer.

Out contributors

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The 20-point programme monitoring cell reports . . .

9

1971 new house sites provided every day

In December 1982, 63,000 new house-sites were given to needy rural families, making a total of 5,42,000 new sites allotted during April-December 1982 against 1982-83 target of 10,43,000 new house sites.

Cent per cent coverage

In December 1982, all the 320 blocks meant for accelerating programmes of welfare for women and children, specially in tribal, hill and backward areas were covered against 1982-83 target of 320 blocks.

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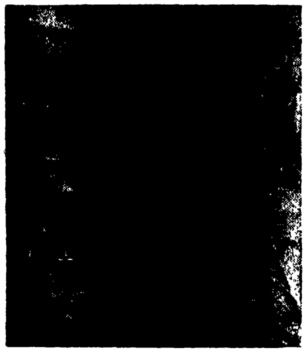
The 20-point programme monitoring cell reports . . .

Daily 116 villages provided drinking water

In December 1982, 3,602 more problem villages were supplied with drinking water, making a total of 24,049 villages provided with potable drinking water during April-December 1982, against 1982-83 target of 34,233 villages.

8



47 villages electrified every day

In December 1982, 3,926 more villages were electrified, making a total of 12,986 villages electrified during April-December 1982 against 1982-83 target of 26,254 villages.

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Why not tax income from agriculture !

VOL 27 NO 5

yojana

MARCH 16-31, 1983 RUPEE ONE

THE SYMPOSIUM

Surjit Singh Barnala

Piloo Mody

NEXT ISSUE

Do well we must, but how !

Agricultural revenue is less than one per cent

The Union Finance Ministry has told the States that despite the massive investments made in agriculture and the incomes generated from them, the incidence of direct agricultural taxes like land revenue, agricultural income-tax surcharge and cesses does not even constitute one per cent of the net domestic product from agriculture for the country as a whole. There is also no evidence to suggest that the States with relatively large holdings and higher per capita income from agriculture realise a larger proportion of direct taxes from agriculture than others. Nor is there any significant element of progression in direct taxes in agriculture and even in the States which have surcharges on land revenue.

The committee headed by Dr. K. N. Raj, in its report on the feasibility of levying agricultural holdings tax attempted to introduce an element of equity and progression in agricultural taxation. However, the Planning Commission took the view that agricultural holdings tax involved administration and legal complications and might be too difficult to implement. The State Governments also expressed the view that the methodology of compilation of agricultural holdings tax as suggested by the Committee was very cumbersome.

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The Symposium

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The move is handiwork of 'anti-farmer lobby'

"Agriculturist in India," says the author, "is already heavily taxed and to think of imposing on them agriculture income tax is an anti-farmer lobby move. The appointment of Prof. K.N. Raj Committee for going into taxation of agricultural wealth and income way back 1972 *was a move engineered by this very lobby," adds the author.*

SURJIT SINGH BARNALA

TO SAY THAT AGRICULTURE INCOME is not taxed is a misnomer. Land revenue which is the oldest known tax in the country is a tax paid by an agriculturist from the income derived from the produce on the land. This is a tax which is being paid by the farmer since times immemorial when no other form of taxation was known. When crops fail due to some natural calamities like floods, hail-storm or drought the Governments exempt the payment of the land revenue which clearly indicates that it is not a tax only on land holdings but its basis is income from the land. In some States small holdings up to 5 acres of land have been exempted from payment of land revenue. The basis for which is the same as in the case of income tax exemption, namely the lack of paying ability.

In recent times alongwith the thinking of increasing income tax, increase in the amount of land revenue was also made in many States in the form of surcharge, special assessment of land revenue or progressive additional land revenue. In addition to such increase in land revenue cess on commercial crops have been levied in almost all States in the country. These are taxes on the agriculturist with no scope for evasion or manipulation.

'Anti-farmer lobby'

Anti-farmer lobby has been consistently propagating that agricultural sector is under-taxed and they succeeded in getting committee headed by Prof. K. N. Raj appointed to go into the taxation of agricultural wealth and income in 1972. Had all the recommendations of the committee been accepted by the government the agriculturists would have been ruined resulting ultimately in serious setback to the agricultural production.

The reported land reforms have resulted in radical reduction of form holdings and the size of the holdings is continuously on the decline because of the prevailing inheritance laws and partial alienations. Even according to agricultural holdings Census 1970-71, large sized operational holdings above 25 acres were below one per cent of total holdings in West Bengal, J.&K., Kerala, Manipur, Meghalaya, Tripura, U.P. and Assam; between one and two per cent in Himachal Pradesh, Tamil Nadu, Orissa and Bihar, and between four and five per cent in Andhra Pradesh and Punjab. The proportion was high in Rajasthan, Maharashtra, Gujarat, Madhya Pradesh, Haryana, Karnataka and Nagaland. But in most of these States the proportion of irrigated area to sown area is rather low and agricultural output remains precarious and uncertain. Most of the large holdings are joint holdings owned by several members of the family as in undivided Hindu Families.

Indirect tax burden is heavier on agriculture as compared to non-agriculture sector. Farm inputs are heavily taxed as are also the farm machinery and implements. This burden is seldom fully covered by the support prices of farm produce.

Green revolution impact

There is another wrong notion intentionally made current by anti-farmer interests that with the adoption of new farm technology and the onset of green revolution financial position of the agriculturists has tremendously improved. The actual position is however otherwise. There has been a tremendous increase in the indebtedness of the farmer during the last decade as will be indicated from the facts regarding loan-overdues from the Punjab Cooperatives. The over-dues at the end of the year 1969-70 were Rs. 1966 lakhs, at the end of 1974-75 these were Rs. 3969 lakhs and at the end of 1979-80 the over-dues had exceeded Rs. 5319 lakhs. This accumulation of debt is subject to compound and penal interest rates. Almost similar is the position in most of the other states. Before

(Continued on pge 12)

Quote it, "if tolerable", said Piloo Mody

"When one taxes income, one must also give relief, when through risk, disaster creates an enormous loss. As we do not have a wise enough Government which can devise such a scheme which will compensate farmers when they make losses either through natural calamities or disease taxing them for the few good years that they had is an arbitrary exercise and extortion".

IN OCTOBER LAST we approached some eminent economists and politicians to join Yojana debate on 'tax or no tax on agricultural income'. In this quest we just could't miss Piloo Mody.

Piloo, who, alas!, is not in our midst today, freely used his wit and sarcasm to shake both critics and admirers, 'Yojana', Piloo thought, too deserved it!

And, here is how he gave us the shake...

From Piloo Mody to
Chief Editor, 'Yojana'
November 13, 1982.

I was surprised to receive your letter of November the 10th. I do not recall having made a date with you regarding an article, because it is totally against my line of work to write on specific issues which require proper research and thought.

That income should be taxed, but fairly, is a commonly accepted principle.

When one taxes income, one must also give relief, when through risk, disaster creates an enormous loss. As we do not have a wise enough Government which can devise such a scheme which will compensate farmers when they make losses either through natural calamities or disease, taxing them for the few good years that they had, is an arbitrary exercise and extortion.

If you find it tolerable, you may quote the above paragraph.

With warm regards,
Sincerely yours,
Piloo Mody

From Chief Editor to
Piloo Mody
November 23, 1982

"Dear Mr. Mody,

So nice of you to have written back. Sorry for giving the impression of your date with us. In fact it is our letter of October 19, 1982 which suggested a date and we took it that you would surely respond and join the debate.

We welcome your views on the subject and would be glad to reproduce the paragraph, as it is, in our issue. It is an open debate and there is no question of the views being "tolerable".

In case you feel inclined to add a para or two more on similar lines, we welcome you.

With very warm regards".
Sincerely yours,
Chief Editor.

Planning should increase social benefit, decrease social cost

Social welfare is achieved through increase in aggregate consumption and its equitable distribution among the people. While implementing the plans, the Government uses a criterion of social profit which ensures that for each plan scheme a higher social benefit is achieved over social cost. Always the endeavour is to keep the social cost at the minimum and social benefit at the maximum.

DR. S. TRIPATHY

THE OBJECTIVE OF PLANNING is to maximise social welfare. When Pandit Jawaharlal Nehru introduced the concept of economic planning in India even while engaged in freedom struggle, through the National planning Committee, his main objective was to ameliorate the extreme conditions of poverty of the Indian masses, for which soon after independence the Planning Commission was established and all through these years the Commission has been endeavouring to maximise social welfare through planning.

The social welfare is achieved through increase in aggregate consumption and its equitable distribution among the people. The economic concepts like national income, employment, self reliance etc. come under one of these two functions of social welfare. A higher rate of growth of National Income brings about increase in aggregate consumption. Likewise increased employment brings about higher aggregate consumption and also is a means of re-distribution of income among population. Self-reliance similarly is related to increase in the flow of goods and wages and hence to the aggregate consumption.

Social profit

The schemes that are implemented under planning are expected to achieve these objectives. A higher standard of living through increased aggregate consumption and its distribution among the population can be achieved only if the schemes implemented through planning yield a higher benefit over the costs. The concepts of costs and benefits of the plan schemes implemented by Government differs from the costs and benefits of investments made by a prifite entreprenures. The latter is interested in the commercial profitability. He attempts to maximise his profits from the investments and the inputs and outputs that enter this objective function of maximising profits are valued at prevailing market prices, interest rates and wage rates. But if the Government adopts this criterion for taking up different projects, it will end up implementing only such economic projects that will give maximum commercial profits and schemes such as schools, hospitals, roads, slum-clearance, multipurpose river valley projects, etc., will never get implemented. Does this mean that the concept of profitability should be rejected in planning ? Far from it. Instead of using the concept of the commercial profit, however, a criterion of social profit is adopted which ensures that for each plan scheme a higher social benefit is achieved over the social cost.

There are three basic steps in arriving at social profit—

(1) A statement of the objectives and their relative importance.

(2) Social pricing of the values of input and outputs which are called shadow prices.

(3) Reducing the stream of social costs and social benefit flows to an index such as B|C ratio, IRR, pay back period, etc.

Through the use of social cost benefit analysis technique, plan projects including roads, schools, hospitals, irrigation projects etc., have to be prepared in such a manner that the social costs are kept at a minimum and the social benefit at a maximum. The most crucial factor in this is the use of prices. The prices to be used in analysing costs and benefits should reflect the social opportunity costs. In other words the appropriate prices of an input used in a plan project must be the value of the best alternative use foregone As for example. a labour employed in a factory would otherwise have been working in agriculture. The value of the out-put he would have produced in agriculture is a measure of the social opportunity cost of that labour. Similarly if domestic production of foodgrains replaces imports then the value of the imports saved represents the social opportunity cost related to the value of foodgrain out-put. If the particular commodity is persistently in excess supply, the social opportunity costs will not be as high as the prices charged would suggest. Therefore, by using the ruling price of the market in question in plan schemes it will over estimate its social opportunity costs. On the other hand if an item is constantly in excess demand its market price will be an under estimate of social opportunity costs. The most common examples of these two proportions are the unskilled labour and the foreign exchange respectively.

Agricultural labour

The Indian economy is characterized by surplus in agricultural labour and by diverting this surplus unskilled labour to the non-agricultural sector the level of employment and out put in the latter could be increased substantially without any appreciable reduction in agricultural out put. This has the corollary that the level of real wages of unskilled labour in a plan project of the non-agricultural sector exceeds the social marginal cost of that labour. This hypothesis can be slightly extended to mean that social marginal cost of labour is zero. i.e. from the point of view of society labour is a free good. But truely speaking when actual situation is taken into consideration, the social marginal cost of labour cannot be zero because real social costs are involved in diverting labour from agriculture to non-agricultural sector and secondly zero marginal productivity of labour in agriculture is itself improbable if the seasonal nature of the labour in agriculture is taken into account when there is shortage of labour experienced in many agricultural regions. In any case the social opportunity cost of unskilled labour is significantly less than the market wage rate. The question arises how much less will this wage rate be. This shadow price of unskilled labour will depend on conditions prevailing in the areas from which labour migrates and the areas where it seeks employment. Therefore, it will vary from one plan project to another. The division of labour force into skilled, unskilled and semi-skilled category, the source of supply of such labour, previous occupations and wage rates, etc., will provide necessary guide lines in deciding the correct shadow price for the unskilled labour. In the plan schemes which employ a large number of unskilled labourers the shadow price of the wage rate generally vary between 50 to 60 per cent of the market wage rate.

Foreign exchange

Similarly the official exchange rates on the one hand and the black market price on the other provide the limits within which shadow price of foreign exchange will lie and its exact rate will depend upon the conditions prevailing in the particular foreign exchange market. The world price of many important items of import including food, fertilizer and industrial goods when converted into domestic prices at the shadow foreign exchange rates provides the true social opportunity cost and therefore a plan scheme which envisages replacement of such imports including schemes for higher agricultural production should have its costs and benefits worked out on the basis of such shadow prices of foreign exchange which would have been spent had these items been imported.

Direct taxes and subsidies

Plan projects such as Electricity do not enter into international trade and their shadow prices will require the estimation of the costs to society of producing an extra unit domestically and such costs should take into account not only power generation but also its transmission and distribution.

Taxes and subsidies bring about divergence is market and social prices. If there is customs duty on imported equipments, this is a cost item to its purchaser, but from the point of view of the country as a whole it does not represent a genuine cost but only a transfer payment from the purchaser to Government. Hence such customs duty is deducted from the prevailing market price in computing the social costs. For similar reasons subsidies are to be added to the market prices. In other words the price used for computing social costs and benefits should be net of direct taxes and subsidies.

Implementation of all plan projects involves a time-stream of project benefits and costs and all these must be reduced to their present value to determine whether a plan project will yield more social benefits over costs. For this purpose a rate of discount is used which brings down the future value to their present value because time has a money value. To the casual observers the market rate of interest may do the job but in social cost-benefit computation the market rate of interest is not appropriate. The capital markets where the rates of interest are determined are not perfect competition markets. The market rates of interest reflect a preference for the present over the future. Hence the use of market rates would lead to bias in favour of consumption as against investment which is not socially desirable. The issue of social desirability involves value judgement of merit of present over future consumption and therefore the discount rate has to be subjective to some extent. The social time preference for consumption i.e. the trade-off between investment in consumption now as opposed to consumption in future or the profitability of private investment in industry as measured, say by the internal rate of return, or some combination of the two may form the basis in arriving at the right discount to be used in plan projects.

If each plan project uses its shadow prices and discount rates arrived after adopting the approach outlined above, the rates will vary which will make inter-project comparability for choice difficult. Therefore, the discount rates and shadow prices should be chosen at the national level and all plan projects should utilise them in determining their costs and benefits. □

The poverty syndrome and rural development

The hierarchy of Basic Human Needs (BHN) can be summarised as: (i) bare survival, (ii) continued survival with a minimum of food and water, protection from fatal diseases and adequate shelter, (iii) productive survival with additional anti-disease protection, more food and basic education, and (iv) non-material needs like participation in decision-making and component of poverty in relation to average income constitute the highest subsistence level. The new anti-poverty approach, now adopted by under IRDP has been able to absorb elements of BHN approach.

S. VENU

IT IS NOW A COMMONPLACE that the kernal of the universal poverty problem, at least in the less developed countries, the LDCs, lies in the rural areas and that 'mass' rural development must play a crucial role in its mitigation. However, this key role of rural development is of fairly recent vintage, a product of the 1970s.

In the burgeoning development literature of the 1950s, translated into economic policy for the newly independent LDCs, the rural sector was visualized as a source for "Economic Development with Unlimited Supplies of Labour" in the vein of Arthur Lewis, to which one could add abundant transfers of food and raw materials from the Rural to the Urban sector. The Ranis-Fei argument of dualism completed the picture whereby resources were diverted to industry from agriculture and overall growth rates had to be maximized.

These views proved to be of dubious value in the process of development. The Todaro-Harris and other models provided ample empirical evidence of inadequate labour absorption in the industrial sector. Migration to the Urban areas resulted in accelerated unemployment and squalor in the towns. The fruits of growth accrued to a tiny elite, largely urban, and the rural rich.

Agricultural growth rates grew at a far lower rate than in industry. At the same time, rural population exploded. The ratio of agricultural land to rural population declined. Most important of all, various empirical studies that the traditional developmental model meant, for large groups of people, higher impoverishment despite overall higher growth rates. Income and Wealth inequalities, as measured by Lorenz Curves and Gini Co-efficients were accentuated.

Poverty Line

In India, the famous 'poverty line' studies of Dandekar and Ruth exploded the myth of growth as an unalloyed blessing. For Bangladesh, Indonesia, Malayasia and other LDCs, similar conclusions emerged. The approach to planning underwent a radical alteration. The Fourth Plan laid down 'consumption' standards to be attained by each income segment below the poverty line, assuming a growth rate of 5.5 per cent. In the 'poverty line' approach, a level of income was postulated below which all households were classified as poor. Such a line was derived from an estimate of the level of income necessary to ensure a minimum diet, though opinion often differed widely on what constitutes a minimum diet. The most recent approach to the definition of poverty as laid down by the Planning Commission is a basic nutritional level, which supplants the income level approach. The rationale for this more pragmatic approach will be elaborated later.

The Indian poverty line was in the region of per capita income of Rs. 700 per annum (Rs. 60 per month) or below, which was necessary for subsistence food, shelter and clothing. The World Bank's index of "absolute poor" was around 50 or 75 per capita in 1970 dollars.

Basic Human Needs

As an adjunct of the poverty line approach, basic human needs were defined and stressed in many quarters, particularly the International Labour Office. This approach may be summarized as follows:

i. There is no single level of basic needs, but a hierarchy.

ii. Bare survival is the first level.

iii. Continued survival with a minimum of food and water, protection form fatal diseases and adequate shelter is the second level,

iv. Productive survival with additional anti-disease protection, more food and basic education constitutes the third level, and

v. Non-material needs like participation decision making and the component of poverty in relation to average income constitute the highest subsistence level.

The component to the basket of basic needs and services like education, nutritional standards, social services and the like will depend on the nature of the society concerned and its social mores. Free rice, for example, in Sri Lanka is an accepted way of life. BHN. can be sometimes defined in terms of characteristics of goods and services like calories rather than rice or wheat.

Anti-poverty' revised policy

The Policy emerging from the two related approaches outlined above has been one of the package programmes providing technology, irrigation, feeder roads, hospital, education, credit infra-structure and the like, combining infrastructure and key inputs for certain 'target groups' representing the weakest sections of the population. This approach has been formulated into the Integrated Rural Development Programme, IRDP, now implemented all over India at the block level in each state.

The income and assets of every household in a block are assessed by interviews with a questionnaire, and those below the poverty line identified and categorized in four sub-groups of incomes. Schemes are then devised to promote the well-being of the poorest of the poor. There is a welcome shift away from grandiose infrastructure projects towards the provision of health, education and technologically simple and labour-intensive industries, backed by requisite training and credit facilities. The criteria for project design and evaluation have been modified to emphasize low-cost, easily replicable delivery systems reaching a larger number of the poor than hitherto. The anti-poverty approach has been able to absorb limited elements of the BHN approach: the provision of low-cost essential services is fully in line with a basic needs strategy, while it is argued that 'integrated' projects simultcneously providing productive inputs and community services stress the positive mutually reinforcing linkages between basic needs e.g. between nutrition, health and productive employment.

Nutrition line approach

Why has the Planning Commission changed over to a nutrition line as against the income poverty line?

Investment in human beings is widely regarded as a key economic growth. Chronic illness and ignorance are a drag on all sectors of an economy due to the labour and skills which are cost.

Again, the primary purpose of income accrual is to provide nutrition without which the wheel of an economy cannot move, it being the 'most basic' of basic needs.

Poor nutrition and health damage the economy in three ways. First, they withdraw, labour through absenteeism and premature death. Second, current resources are wasted as it is costlier to cure a person than to keep him healthy in the first place. Third, labour productivity may be reduced by a slower pace of work. Studies by the World Bank and individual researchers have revealed that illnesses like beriberi, tuberculosis and enteric fevers cause millions of dollars loss of production in the LDCs, apart from the extra cost of special food consumed to offset the losses from debilitating fevers—$ 10 per year in Panama due to enteric fever.

Hookworm was found to have affected 85 per cent of workers in the Indonesian rubber and Construction Industries, according to a World Bank study; in India too, the incidence of this disease is far spread. Hookworm has anemia associated with it due to iron deficiencies. In Indonesia, iron supplements for 13 cents per day per worker increased their productivity by 20 per cent— a benefit : Cost ratio of 280 : 1. On Indian dams, it has been found that construction workers improve their productivity two-fold with three balanced small intake meals per day, dependent on the calorific value and nutritional content. It is also well know that malnutrition causes mental retardation.

The Planning Commission has fixed a line of around 1500 calories as a cut-off point, analogous to the Rs. 700 per annum, income cut-off point. Those whose nutritional intake is below this level are the weakest segments whose conditions has to be bettered by nutritional supplement schemes, or by changing the composition of diet through exhortation or other means.

Unresolved Issues:

There are, however, many unresolved issues. Since all the socio-economic surveys of the IRDP blocks have been made with an income base for identification of the beneficiaries, is one to regard the 800 families identified per block each year as potential beneficiaries or target groups for any nutritional supplement schemes also ? Will further survery be required to correlate income and nutritional levels ? This is a vast and arduous job in terms of time and money. The assistance of UNICEF and FAO in this area would be useful, since they have conducted surveys on their own.

Although Engels' Law is often vindicated with rising incomes, in a shift to 'superior' foods, it must be remembered that his is not always so. Cultural imperatives, including taboos, often prevent communities from taking healthful food when it is available.

The World Bank estimated that the number of people in absolute poverty is 695 million. The FAO pointed out that 460 million are below the protein energy limit. The large discrepancy illustrates that statistical data give only very approximate orders of magnitude. The estimated calorie intake is based

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Achieving energy conservation through price mechanism

There is a wide gap between the production and consumption of energy, of which there are three main forms: oil, coal and electricity. Coal and electricity shortages have been managed by rationing and control, the gap between the consumption and domestic production of oil has been met by increased imports. Since the extent of shortage is large and has existed over a long period, a rationalisation of demand must complement the efforts to augment supply. Rationalisation must take sectoral consumption towards higher efficiency so that finally marginal units of energy add equal values in all activities. This objective can be best realised by using prices as allocators of energy rather than subjecting distribution to non-price or quality rationing.

J. N. CHAUBEY

THE SINGLE MOST important problem confronting the economy in the recent past has arisen from the wide gap between domestic production and consumption of energy. This shortage has caused widespread underutilisation of capacities, affecting adversely the performance of the economy. It is generally believed that this situation can be remedied by stepping up energy production and removing existing inefficiencies of distribution, e.g. transmission losses in power sector. Whereas it cannot be denied that a better supply management will ease the shortage, it is doubtful if this measure alone will solve the problem entirely. For, as we shall soon see, there are serious lacunae on the side of demand, and they have their own share in contributing to the imbalance in the energy sector.

Needless to say, there are limitations to the extent the supply can be increased. The current shortages are too large to be managed even if best possible supply efforts are made. On the other hand, there is an unduly high intensity of energy consumption in certain sectors of the economy. Economic growth in the country seems to have involved an adoption of successively high energy intensive techniques, a trend that is unwarranted in a country where energy resource cost is very high. This lacuna alone justifies an intervention on the demand side. An appropriate management of demand at this juncture will not merely bring about economy in energy consumption but will also reduce energy shortage. In this paper, we examine the extent of shortage and critically assess the role of certain demand management policies in this context. In particular, we make a case for using prices as a necessary policy component in dealing with the current energy problems.

Energy shortage

For quite a long time, there has been a considerable shortage of all the three principal energy forms, namely oil, coal and electricity. Since oil shortage is entirely met by imports, its extent can be easily ascertained. In the case of coal and electricity, it is difficult to determine potential demand especially since disequilibrium has long existed in both the markets. The reported shortage, which is simply an annual average for the country as a whole and as such does not reveal the problem of difficult areas and lean seasons, was 16 per cent during 1978-79. The same figure for the eastern region during this year was 22.9 per cent. The shortage during summer months must have been even more acute. For coal, the reported gap between supply and potential demand was 9 million tonnes during 1978-79, which increased to 15 million tonnes the following year. The annual production of coal stagnated at 100 million tonnes during the preceding three years. The average annual increase in its production during the seventies was only 3.8 per cent, whereas the demand for coal rose rapidly through the decade due to its increased application in place of other energy forms.

While coal and electricity shortages were managed by rationing and control, the gap between consumption and domestic production of oil was met by increased imports. As a result, there was a phenomenal rise in the value of petroleum imports. From a modest level of 9 per cent of merchandise export earnings in the fifties and sixties, petroleum imoprts rose to 72 per cent of the former in the fiscal year 1980-81. In terms of absolute values, petroleum import bills increased from US $ 181.2

million in 1970-71 to US $ 2 billion in 1975-76, and to a staggering US $ 6.5 billion in 1980-81. The increase of this proportion has caused a great strain in the balance of payments, making adjustment a difficult and costly affair.

Demand Management

Since the extent of shortage is large and has existed over a long period, a rationalisation of demand must complement the efforts to augment supply. Rationalisation must take sectoral consumption towards higher efficiency so that finally marginal units of energy add equal values in all activities. This objective can be best realised by using prices as allocators of energy rather than subjecting distribution to non-price or quantity rationing.

Non-price rationing may perhaps be an acceptable mode of demand management only if the shortage is of a temporary nature. Thus, where power production has been affected due to rain failure, a quantity control may be the only viable arrangement to allocate resulting shortage among consumers. But where shortage lasts long, as in the case of energy, non-price rationing may become counter-productive. Firstly, a good deal of information about demand is lost, leading to an ad hocism in production planning as well as quantity allocation. Secondly, it simply helps keep prices low, but does nothing to correct the disequilibrium in the market. Low prices in turn reduce profitability thus causing investment in the sector to decline. This has been the actual experience in coal and power sectors. During 1977-78, the average cost of producing net saleable coal was Rs.83.03 per tonne, whereas its price was only Rs. 66.49. The gross return on capital invested by Coal India Limited was a mere 0.6 per cent, and the resulting loss amounted to Rs.1379.3 million. In 1978-79, the loss increased to Rs. 2379.3 million. The situation was no better in State Electricity Boards. Most of them incurred substantial losses due to low return (8.6 per cent) on their capital investment Since public investment in energy companies is large (30 per cent), the surpluses generated in other enterprises were not enough to cover these losses, not to speak of financing much needed investment in the energy sector. Thirdly, non-price rationing does not prevent an inefficient use of resources. For want of correct assessment of demand and objectivity in his decisions, the administrator often fails to make optimum allocation. The value added by marginal energy thus differs from one activity to another. While some units manage to get too much energy, others are simply starved. All this has brought about great inefficiency in the consumption of energy in the country.

Inefficiency in energy use

The average energy intensity, defined as the ratio between total energy used and the GDP at constant prices, has been increasing in the country since the fifties. What is more, growth in the country has involved the adaptation of more energy intensive techniques than even those used in western countries. Since India has a greater energy resource cost, this suggests an inefficient use of the resource.

The evidence of inefficiency has been discussed in the Report of the Working Group on Energy Policy (RWGEP-1979). Accordingly to RWGEP, the value of energy elasticity (which is a reverse ratio between average intensity defined above and incremental intensity) for India is 1.83, whereas it is 0.76 for France, 0.73 for West Germany, 0.43 for UK, 0.87 for USA and 0.84 for USSR. It shows that India has been increasing its energy intensity when the countries of the west have been decreasing theirs.

Sometimes a high value of elasticity may give an ambiguous conclusion. If a country begins modernisation from a low base, its average intensity is bound to rise. An increasing intensity may therefore be a sign of progress rather than a matter for concern. However, in the process of modernisation, the country seems to have increasingly acquired techniques with average intensity even higher than those used in the west. This is clear from the comparison of incremental intensities of various countries. The incremental intensity during 1967 was 3.5 for India, 1.0 for France, 1.46 for West Germany, 1.6 for UK, 3.2 for USA and 3.2 for USSR.

This trend in consumption bears an interesting correlation with the trend in prices. Contrary to what was happening in industrialised countries, the real prices of all energy forms steadily declined in India during the two decades preceding the hike of petroleum prices in 1973. The real price of electricity, coal and oil declined at an annual rate of 3 per cent, 1.5 per cent and 1 per cent respectively. Energy prices did rise after 1973, but the extent of increase was low compared to price changes in the international market. During the period from 1972 to 1980, the domestic prices of petrolium products rose only by 289 per cent, whereas their prices in the international market went up by 818 per cent. It is quite likely that excessive use of energy in the country had been encouraged by a declining trend in real prices.

Price rationing a better alternative

As discussed in Section III, the adoption of non-price rationing in dealing with energy shortage may only add to the problem. A preferable way to manage demand may lie in using prices so that a substantial part of the shortage is eliminated. This may involve raising energy prices uniformly, providing labour subsidy in sectors where labour and energy are high substitutes, and increasing capital taxes in sectors where energy and capital are complements. After adjusting for additional supply that may be available in the near future and for random shortfall in production, if any, the remaining extent of shortage must entirely be eliminated through the price mechanism.

However, the success of this strategy will depend on the following conditions:

(a) There are possibilities in the economy for conserving energy by raising prices; and

(b) There are mechanisms available to be Government by which adverse effects to equity, if any, can be avoided.

Our analysis of the previous section lends some support to the first condition. If a downward trend in prices encouraged excessive consumption in the past, then an upward trend will discourage it, too. There are other studies that assign a definite role to prices in managing energy demand in the couny. Noel Uri (1979) examined substitution possibilities in Indian economy and found that "relative change in energy prices have significant effect on energy consumption." Comparing his own results with those of Hudson and Jorgeson (1974) for the USA, he observed that "for coal and electricity India is significantly more price-responsive while for oil the responsiveness (in both the countries) is about the same". Kirit Parikh (1979) similarly expresses that "fuel substitution which is justified by such (high) oil prices will take place". The Working Group on Energy Policy has also made the following observation;

> 'The energy policy outlined in the earlier chapters requires certain specific types of inter-fuel substitution. Though some of these can be achieved by fiat, the task of regulation would be facilitated if relative prices of energy reflected the required direction of change". (RWGEP, P. 95).

The use of the price mechanism is however discouraged in some cases for its possible adverse effects on equity. It is perhaps for this reason that the Government is often reluctant to raise diesel oil and electricity prices. But the alternative of keeping prices low for all consumers is obviously not an efficient option either. Instead, while raising the prices the Government can ward off adverse equity effects by subsidising the consumption of target groups, so that they are not made to bear the additional burden. The Government of Karnataka has recently started a similar subsidy programme, called Bhagya Jyoti, under which members of the weaker section are provided free electrification of homes. Government grants are also available to cover electricity charges for street lighting and supply of drinking water in areas where local bodies are financially weak. On the other hand, if the prices are kept low in the interest of equity, the benefit may not always reach the poor. For instance, the proportion of the 'poorest of the poor' among the users of transport services may not be considerable. Yet the benefit of diesel subsidy has accrued to all consumers in this sector. Since transport sector alone accounts for 55.4 per cent of total oil consumption in the country, the hidden subsidy to undeserving groups has obviously been very high. A similar situation also prevails in agriculture. The proportion of the poor among the owners of electric pump-sets may perhaps be insignificant. Their consumption should therefore be subsidised differently rather than by keeping power tariffs generally low and thus subsidising the consumption of rich farmers in the process. The equity argument against raising energy prices may be often misleading.

Thus we have seen that energy shortage in the country has increased in the recent past, adversely affecting production. Although augmenting supply may partly remedy the problem, it is also necessary to remove existing inefficiencies in consumption. A preferred strategy in this regard is to use prices of energy, capital and labour with a view to reducing energy demand in the economy. There seems to be enough scope for achieving energy conservation through price mechanism. Any adverse effect on equity that may arise from this policy can be dealt with effectively by subsidising the consumption of target groups. ☐

The move is handiwork of 'anti-farmer lobby'

(continued from page 4)

thinking to further tax on the farm income it will have to be decided whether to clear debts already incurred from the savings first, or to meet further tax burden and thus allow the indebtedness of the agriculturists to continue increasing until he loses all his land and himself lands in jail for non-payment of arrears.

Any further taxation on agriculture income would lead to a disincentive to investments on minor irrigation and improvement of cultivation on private account. The introduction of agricultural income tax will burden the rustic and simple farmer with the complicated function of submitting income returns. The assessment of farm income cannot be easy and will lead to a lot of time consuming botheration to the ever busy farmer and will provide an opportunity to many others to fleece him through deceipt and corruption. The cost of collection of such tax will also be prohibitive leaving only an insignificant portion for the State exchequer.

India is a vast country having the finest soil and best climatic conditions; still we have not been able to achieve self-sufficiency in production of even foodgrains with the result that we have to import huge quantities of foodgrains every year. We are yet at a stage where agriculture needs a boost through all possible incentives and facilities so that the bare minimum requirement of foodgrains sufficient enough to feed the second largest population in the world could be achieved.

It will therefore be wise not to tax agriculture income for at least another ten years. ☐

Housing quagmire: A critical evaluation of Indian housing market

To create housing one needs four elements: technology, capital, labour and raw materials. In India only labour is not scarce. Current market conditions also exert a negative pressure towards alleviating housing scarcity. Large scale real-estate development for lower income groups is totally absent as a result of low or negligible return on the investment in housing. The only large scale housing development has been done by public sector which is not guided by the return on investment but on fulfilling a social need, i.e. providing shelter.

SACHI G. DASTIDAR

INDIA, LIKE OTHER COUNTRIES of the world, has been attempting to solve her housing problem. And like most other poor Third-World countries, I believe the problem of housing has been turning more acute in India each passing year. To create more housing, one needs three elements apart from technology: capital, labour, and raw-materials. Except for labour the other two elements are scarce in India. and capital most scarce. However through my personal observation over a period of ten years, I find that even the current market condition in India exerts a negative pressure towards alleviating housing scarcity, which I will explain further.

I am writing this from the point of view of an architect-planner who has worked on housing in India and who has been working and teaching on the subject for over a decade. This presentation is based on my detached observation made on my number of visits to Indian cities ranging from Jaipur to Bangalore, and from Bombay to Kohima, as well as speaking to planners, home-owners and renters in India, and Indian home-owners and real estate agents living in the United States, and following the real estate advertisements in Indian papers. In an observation like this, one always risks being biased.

Economic Function of Housing

The two most important functions of housing are creation of jobs and shelters for living. Jobs are created directly in the construction industry and secondarily in the industries who are suppliers to the construction industry. Unlike India, in the U.S. and the other affluent nations of the world, job creation plays a more important role than creation of shelters. In India, creation of shelters plays a more important role than creation of jobs.

At present in India, housing units are created by both public and private capitals. Private capital has almost always addressed itself to the middle and high income groups. Because of the absence of long-term financing, until recently, one had to accumulate enough cash to be able to buy a home, which naturally precluded the lower and many in the middle income groups. Except on rare occasions, large scale real-estate development by individual developers was totally absent. This brings me to the real "issue" of this paper. I believe that the lack of innovation and investment in housing is the result of low or negligible return on the investment in housing. The only large scale housing development has been done by the public sector which was not guided by the return on investment but on fulfilling a social need, i.e. providing of shelters. Nowadays even many public sector analysists, state and central, are rethinking their strategies for future investments.

Current Housing Practice

In January 1982 while visiting a planning office in India, a housing expert told me that the "real difference in India between a renter and an owner of a house is in one's mind. Except for the fact that the owner has more headache."

He was referring to the fact that once a unit is rented, it is likely to be rented to the same person and his descendents, and without any rent increase. In India, most of our norms, beliefs, laws prohibit evicting a tenant, and against rent increases. Some of these have developed from our pacifist belief and others because of to have some laws protecting the poor from the big landlords. However, at present these customs have created some socially undesirable practices. One of these is for a home-owner to look for a non-local renter; i.e. with roots in a different state with a hope that the renter will eventually move back to his state-of-origin after the renter retires. The home-owner also believes that it will be easier to raise rent of a non-local than a local. Another custom in some areas has been to collect huge sums of "pagri" or "selami" or "down payment" which may or may not be adjusted with the future rent. This naturally puts extra burdens on low income and young persons looking for jobs outside his|her home town, and against seeking an independent life style for young, and against accumulation of savings for those renters.

However, an owner of a housing unit, finds these practices as a "necessity" otherwise the owner may be stuck with a renter whose rent may never go up, or the renter may even refuse to pay rent without much recourse to the owner. Compared to India, the United States is in the other end of a scale where market condition determines the rent. However, even in the U.S. some "rent control", "rent stabilization", "rent guidelines" were established as a part of the movement to create an egalitarian society and because of the crisis resulting from the Great Depression of the 1930's which are now being vigorously dismantled under the new Administration.

No attraction to private capital

In India because of the aforementioned practices private capital is never attracted to create more housing particularly towards cheap housing units for low-income people, where the need is greatest and demand is increasing every day. To make the supply of housing units even worse, a number of housing units when they are sold are not occupied by the owners but are kept vacant for eventual occupation after retirement or in case of their relocation to the city where they have bought the housing unit. For example, a person originally from Madras but now living in Calcutta will often buy an apartment in Madras for his eventual return to Madras and may keep his apartment unoccupied for his fear that once rented, it may never be repossessed. This indeed adds another dimension to the complex problem of housing shortage that already exists now.

In a recent cursory survey, I found in one high-rise building three out of eight apartments were unoccupied, and in another two out of ten were unoccupied because the owners now live elsewhere. And of those Indians living overseas who own apartments in India, almost all either do not rent or are given to "reliable" relatives practically for protection and without any payment of rent. In a housing-scarce country, these vacant housing units must be considered as a national waste and burdensome to our socio-economic well being.

Conclusion

One dares to give a solution to such a complex problem. Growth of "leasing" instead of "renting" is a product of assurance to the owners. Of course one can develop a system like "rent control", or "rent guidelines" set by planners and economics. One can also set a maximum rent increase determined by the return of money at the bank which I am sure will be politically unpopular. Without some assurances of the return to their investment and family's life savings, people will avoid investment in housing and instead Indians will keep spending on conspicuous consumption at the cost of a basic necessity like shelter. In the meantime, I feel government should totally discourage people buying housing units which will remain vacant in the foreseeable future. Judging from the private as well as government real estate advertisements in the Indian newspapers in America, likelihood of this proposal doesn't appear bright either. ☐

NPCC turn-over expected to increase

THE National Projects Construction Corporation, a premier construction organisation of the Energy Ministry, engaged currently at more than 40 projects within the country and abroad, expects to increase its turnover from the estimated Rs. 70 to Rs. 75 crores during 1982-83 to Rs. 100 to Rs. 125 crores by the end of the Sixth Plan.

During the current year, the Corporation bagged some important contracts including the Salal Power House and the integrated water supply scheme at Singrauli, both valued at Rs. 19 crores each and the Khajuria Ghat Complex of Farakka super thermal power station worth Rs. 11 crores.

The Corporation completed during the productivity year 1982, a number of projects in the core sector of the economy in record time, the most significant being the 4.6 kilometers Godavari Barrage in Andhra Pradesh. World's longest, the Godavari Barrage was dedicated to the nation by the Prime Minister in October last and is expected to prove perennial irrigation to more than one million acres.

More profit for public sector undertakings

THE manufacturing units under the Department of Heavy Industry are expected to make a profit of about Rs. 60 crores in 1982-83. These undertakings had turned the corner last year by making a profit of Rs. 18.38 crores against a loss of Rs. 50.12 crores in 1980-81. Total production of these undertakings which increased from Rs. 1302 crores in 1980-81 to Rs. 1615 crores in 1981-82, representing a growth of 24 per cent are expected to further improve by 25 per cent during 1982-83.

The public sector undertakings under the Department of Industrial Development recorded an increase of 35.5 per cent in value production during 1981-82 over the preceding year. It is provisionally estimated that units under this department earned a profit of Rs. 836 lakhs during 1981-82 against a profit of Rs. 140 lakhs in 1980-81.

Again Heavy Engineering Industries, in public and private sectors continued to record further growth in production during 1982 after having contributed their share in the overall industrial growth of more than eight per cent in 1981-82.

Modernising car industry

Until 1942, no serious effort was made to manufacture motor vehicles in India. The vehicles were mostly imported and some firms were assembling the components. Post independence era witnessed a balanced Government policy to streamline the production of cars within the country with the result the number of cars manufactured zoomed to 42,106 in 1981 from a mere 2,114 in 1947.

R. C. SRINIVASAN

The country's transport requirements are met by a variety of travel modes. These include railways, road transport, inland waterways and coastal shipping besides air transport. Road transport includes mechanised modes as well as manual and animal drawn carts. Presently mechanised passenger road transport vehicles include cars, jeeps, taxis, two and three wheelers and buses.

The cars and two wheelers represent personalised transport modes used by respective owners; taxis and three wheeler scooters represent personalised modes operated for hire. Jeeps are used by both private parties and public bodies. Buses represent the public transport system be it in private or public sector.

The following table indicates the growth in the number of cars and taxis in the country vis-a-vis all vehicles at different times.

Table 1—Car & Taxi Population

Year	Total Registered Cars	Total Registered Taxis	Total All Registered Vehicles
1950-51	147712* (48.2)	11551 (3.8)	306313
1960-61	256243 (38.6)	21663 (3.2)	664475
1970-71	539475 (28.9)	60446 (3.2)	1865315
1979-80	757247 (18.4)	91613 (2.2)	4105591

Note :—Figures in brackets indicate percentages to total.
*This includes jeeps population as well.

Source : Motor Transport Statistics, Ministry of Shipping and Transport.

It is observed that cars have steadily lost their share in total vehicle population from about 48 per cent in 1950-51 to about 18 per cent in 1979-80. Taxis—operating for hire have had a near static share till 1970-71 and have suffered a loss in their share by 1979-80. The reasons for this decline are not far to seek. This is a direct result of the changing composition of different modes and the emergence of widespread use of fuel efficient two wheelers and three wheelers and the growth of public transport system.

Cars represent a travel mode, used predominantly by affluent sections of the society, besides private and public corporate bodies and the government sector. The demand of this sector is directly related to the increase in their economic activity. Taxis representing 'for hire vehicles' are mostly confined to cities meeting local transport needs. To cater to the growing demand of cars and taxis the car industry has shown an increasing trend in production as could be seen from the table below.

Table 2—Car Production

Year	Number produced
1947	2114
1951	3478
1961	21662
1971	38313
1981*	42106

Source: Association of Indian Automobile Manufacturers, Bombay. It is interesting to trace the growth of car industry in the country, along with prospects for the future.

Until 1942, no serious effort was made to manufacture motor vehicles in India. The vehicles were mostly imported and some firms were assembling the components as vehicles. Hindustan Motor Ltd. registered in 1942, was the first to take up actual manufacture (as distinct from assembling). Soon thereafter, Premiers Automobiles Ltd. (formed in 1944) and Standard Motor Products of India Ltd. (formed in 1948) entered the scene. The growth of car manufacturing industry owes directly to the Government Policy in this regard. A fourth company manufactures (Sunrise Auto Industries) three wheeler cars from 1976. Hindustan Motors and Premier Automobiles have emerged as the major producers.

Government Policy towards Car:

Soon after Independence, the Industrial Policy Resolution of 1948 mentioned the industries manufacturing automobiles and tractors as subject to regulation by the Government. In 1949, the government announced that motor vehicles could be imported only in completely Knocked Down (CKD) condition. Thus by 1950, with the efforts of a car manufacturing firm in operation, India had cars that were partly of indigenous manufacture. There was tie up of the Indian firms to manufacture models used overseas.

Policy in Fifties

In 1950, the government announced that after 1951, importers and assemblers who had no manufacturing programme would not be considered for allocation of foreign exchange. The time limit was extended upto 1952 end. In the same year, Govt. also directed the Tariff Commission to look into the growth of the automobile industry. The Tariff Commission in 1953, recommended that only five companies who had proper manufacturing programme should be permitted to operate and that the others should close down. This was with a view to build up indigenous content of manufacture. At the same time, it was also thought desirable to limit the number of models and makes so that each type had an economic volume of output. The protection thus given, encouraged the infant motor car manufacturing industry. Out of the companies that were allowed, two dropped out thus leaving the three firms Hindustan Motors Ltd., Premier Automobile Ltd. and Standard Motor Products of India Ltd. in the field. Import of cars were taxed heavily. In 1955, the Govt. again directed the Tariff Commission to review the progress made. The Commission (after a study) felt that protection should be continued for another ten years. It opined that should there be expansion of capacity, it would be better to allow existing firms to add to capacity instead of allowing new firm to do the same. The Commission also felt that rigid price control would not be conducive to growth and hence stated that manufacturers should be given the freedom to revise prices of cars with a month's prior notice. At the same time, the Govt. could intervene, if it was felt that the price hike was unwarranted. The car industry was still dependent on imported foreign components on a large scale. The foreign exchange problem of 1957-58, forced the Govt. to limit the types and makes of vehicles. As the supply of cars were less than demand and with Govt. keeping a watch on the scene, the price control tended to become rigid. Meanwhile an Ad Hoc Committee on Automobile Industry was constituted.

Policy in Sixties

In its Report (1960) the Ad Hoc Committee stated that since demand was more than supply it was necessary to continue the price control on cars. It suggested that sale of cars should be ensured on the basis of order of registration of bookings and resale of cars should be prevented for a certain period of time from the date of purchase of the new car. It also examined and stressed the need to increase the indigenous content of vehicles and the desirability of producing a low cost pepoles' car. The car industry started to increasingly indigenise the components. Govt. from time to time was keenly monitoring on this. Since the indusry was growing under the atmosphere of protection, the rising demand gave rise to conditions of sellers' market.

Further due to historical reasons, the automobile ancillary manufacturers had emerged in substance rather late. This was because car manufacturers decided to establish facilities in their own premises to manufacture major and minor components. The car manufacturers and the ancillary industries enjoyed safe protection due to restriction on imported components. As there was apprehension that these may impair the quality of cars produced in the country, another Committee (The Motor Car Quality Enquiry Committee) studied the question and in its report (1968) pointed out that much progress had been achieved in increasing the share of indigenous components in the car industry. It also felt that the quality of cars produced in the country should be constantly monitored and improved.

Policy in Seventies

Since year after year, there was a wide gap between demand and indigenous supply, Govt. decided in 1970's to create additional capacity and granted letters of intent to parties who claimed that they would no require import of capital goods or allocation of foreign exchange. Meanwhile selling price of cars had to be increased (following the judgement of the Supreme Court on writs challenging the Govt. order in not allowing the hike in car prices). The increase in the price of cars, and the higher maintenance and running costs after the oil crisis of 1973-74, led to conditions of a buyers' market. This led to a fail in the production of cars. Hence the Government withdrew price, sale and distribution control on all the three makes of cars. The Government have been continuously testing the vehicles for quality and keeping a watch on implementation of the same.

Policy in Eighties

The fuel crisis of the seventies had called for attention to be paid to fuel efficiency and reliability to end users of all motor vehicles. The Government wanted to shift the focus of development efforts from creation of additional capacity with obsolete techniques to enhancing the technological levels of various sectors. Govt. wanted that imports of modern technology are brought on to the automobile industry (including the car producing sector). It was felt that essential inputs of upgradation would result in standardisation, economies of scale, inter-changeability of components and reliability to end users. In accordance with this policy, the Hindustan Motors Ltd. and the Premier Automobiles Ltd. have plans for modernisation. The Govt. have also decided to enter the industry to manufacture cars with modern technology.

The stages of Govt. coming to this field has been gradual. In the sixties, there was talk of the "small car" or the peoples' car. By the beginning of the seventies, three letters of intent were issued to private parties. The one that remained, which later liquidated was taken over by the Government. The reasons for the Government deciding to enter the field of car manufacturing are several. Important among them are the need for modernising automobile industry, production of fuel-efficient vehicles, advantages of scale economies by production of larger number of vehicles, producing a peoples' car suited to Indian climate and driving habits, generating employment through the activity, development of hitherto dormant anciliary industry and creating potential for earning foreign exchange by export of vehicles manufactured. The Govt. company Maruti Udyog Ltd. have recently concluded agreement with M|s. Suzuki (Japan). The capacity for production of cars would be about 40,000 per year besides capacity for pick up trucks and micro bus. The production is expected to start by end 1983. Thus, the capacity for production of cars in the eightees is likely to be of the order of 92400 (consisting of 52400 in the existing plan and additional 40000 in the Government company) per annum.

Keeping in view the trend likely to emerge towards modernisation of the industry through production of fuel efficient and improved versions of vehicles and taking into account the growth in the economy and growth of cities, one could foresee a steady demand for cars in the country. ☐

(*Continued from page* 9)

on hospital records and other indicators of reported malnutritions. Field household surveys are limited to specific areas. Again, for some surveys, clinical assessments are made. For others, children are measured against international weight tables. Hence, though the general indications are useful, the figures derived are "guesstimates".

Yet, the nutrition line approach represents a definite improvement over the previous approaches, provided the other basic needs are still kept in view. The beneficiaries can be given supplements directly without interviewing channels. The burden of poverty and malnutrition is overwhelming, with over 40 per cent of the Indian population undernourished, underfed and ill-protected from disease. If this new approach makes a sizeable dent into this mass, the effort is well worth. However, it is even more important to remove the underlying forces generating poverty like unequal land holdings, a small power base for exploitation by the power elite, quasi-feudal structures and the like.

The problem of poverty is one of providing access to resources for the poor and enhancing their human potential and productivity. It is to these people that the planning process is addressed. ☐

Rehabilitation of Bonded labour

SHRI VEERENDRA PATIL, Minister for Labour has said that rehabilitation work for bonded labour required special qualities of patience, understanding, commitment to a purpose, and dedication to the task to be achieved. Inaugurating a national seminar on Identification of Bonded labour, the Minister said that the schemes of rehabilitation would not work if they were too technical and prepared in a rigid bureaucratic frame work without proper appreciation of the field condition and the traits and habits of the beneficiaries. Formulation of any scheme for effective rehabilitation would have to be done with understanding of their peculiarities and problems. It could not be attended to by a single individual or agency but only by close cooperation of various agencies.

Assistance and Facilities for Ex-Servicemen

IN Sikkim over 350 Ex-servicemen's school going children have been paid stipends upto 31st October, 1982 and over 450 loan applications were sanctioned for ex-servicemen for various agricultural and trade purposes. Out of 200 cows agreed to be provided from Darjeeling, as many as 170 have been received and delivered and a number of them have been given to ex-servicemen.

A decision was also taken to bring the census of ex-servicemen upto date. Renovation of Namchi and Geyzing ex-servicemen's hostels was in hand and the State Government has also agreed to make some quota in Government services available for ex-servicemen.

Medical Institute for North Eastern Region

THE Government has decided to set-up a Regional Institute of Medical Sciences at Shillong. This will be an autonomous organisation, similar to the All India Institute of Medical Sciences, New Delhi, and the Post-Graduate Institute, Chandigarh.

This decision has been taken in pursuance of the recommendations of the Committee of Ministers for Economic Development of the North Eastern Region. This institute will primarily provide curative services at the super speciality levels in selected fields. There will also be facilities for providing practical training in selected specialities and post-graduate education and training at the 1st and IInd levels of specialisation in carefully identified fields related to the disease pattern of the region.

Nehru Award for PAU scientist

DR. Jagir Singh Sidhu, Assistant Genetigist of the Punjab Agricultural University has won the Jawarlal Nehru Award of the Indian Council of Agricultural Research. His research work on *bajra* crop done under the supervision of Dr. J. L. Minocha has been cited as an outstanding basic contribution to the systematic improvement of the crop. The award carries a cash prize of Rs. 5,000.

Assam power scheme approved

THE Planning Commission has approved the scheme of Assam State Load Despatch Centre (SLDC) Stage I, to be set up at Gauhati.

Estimated to cost Rs. 1.63 crores, the scheme is being included in the State Plan of Assam.

Under the first stage, the Centre will have power line carrier communication (PLCC), including generating stations and sub-stations, and teleprinter between the centre and generating stations and important sub-stations.

From chips to chapati
A reverse route

"A micro-processor centre in every village" is a grand idea. India is confronted by many more urgent problems such as providing food, drinking water, education, employment etc. The chips technology will adversely effect the expanding middle classes by denying the very jobs that have expanded the fastest thus far. The industrialised nations have come to exploit the potential of "chips" after ensuring their population of "chapati" whereas in India our policy makers seem bent on taking the reverse route from Chips to chapati.

SATISH JHA

SOON AFTER he took charge as Secretary to the Department of Electronics, Dr. P. P. Gupta, had unwittingly spelt out his vision of shape of things to come in the field of electronics in this country. He had reportedly visualised "A micro-processor centre in every village for deciding on agricultural inputs or soil testing". The out-right fictional nature of mouthing such slogans does not merit elaboration. What it does point, however, is that the growing dualistic character of Indian economy is not mere coincidence. It is clearly the result of a highly segregated policy making structure where the left had does not know what the right hand does. How else can one explain that while the three decades of planned development have not been able to provide drinking water to more than half the population in the country, when nearly as many survive on the brink of starvation, when even going by the most optimistic projections (made by the Registrar General of Census himself) to make them barely sign their names no matter how and in which language would take four centuries, when over two-thirds of the cropped area lies unirrigated, the most advanced sectors are being planned to grow at a rate unthinkable even in the West. They also clearly exposes the bare unrealistic nature of the technology policy in the country. Obviously, lessons from the Western experience have not been learnt properly. The industrialised nations which have ushered in the era of 'chips' have done so after going through a long and arduous process of industrialisation. India being an open economy in as much as it is not as closed as the East block economies, can hardly be expected to be immune to developments across the borders, no matter how desirable or otherwise the need. But while these industrialised nations have come to exploit the potential of new 'chips' after ensuring their population of bread and more, in India our policy makers seem bent on taking the reverse rouse—that from Chips to Chapati.

Spurious

The argument advanced in favour of introducing micro-processor technology are spurious to say the least. A grant vision of tomorrow is deliberately conjured up by highlighting the employment generating aspect of the new chip technology as also its export orientation to meet the using foreign exchange needs of the economy. But the experience of the development of microprocessors in the rest of the world gives a lie to these imaginary ideas. The fact of the matter is that among the industrialised economics the most burning problem is how to reduce rising unemployment-which in turn is a product of the labour displacing character of chips. One can gauge the extent of unemployment created by the new technology by counterposing American experience to the Japanese and the European experience. Americans are happy today to argue that industrial unemployment in the U. S. is not rising at the same pace as in Japan or Western Europe because the spread of new technology though pervasive is not so perverse.

Researches by Vandana Shiva and J. Bandopadhyay on the impact of this technology corroborate much of these arguments cogently.

But, whatever the contradictions, the recent measures taken by the government reveal that the process of transformation of manufacture and information network by the new chip technology has already begun. The Electronics Commission has set up a Microprocessor Revolution Task Force. The Education Ministry contemplates a crash programme to train 2000 engineering teachers in microprocessors so that "every student passing out in the current academic year should know why microprocessors are revolutionising all industry". Given these measures, it may be asked, what are the possibilities of an electronics revolution here and what will in fact be the impact of micro-technology on the economy. At best precise answer to such question can be mere conjectures (or projections based on certain assumptions realistic or otherwise). What can be said with some degree of certainty is that while the upper limit to any such extrapolation is set by the advancement in Japan or the U.S., the Lower limit—which is more likely to be nearer the target—is determined by the technology gaps, both between India and the industrialised world, just as well among different sectors within the country.

Inter-country technology

The inter-country technology gaps in electronics significantly influences the absorption of micro-technology and therefore its impact on the recipient country as well. But while it will be erroneous to expect the chip technology to have a similar impact on developing country as on the developed ones, in respect of efficiency and employment its impact may be similar. In both these areas, however, the impact of chip technology depends on the fact that it is essentially an information technology. On employment its impact is broadly limited to artificial intelligence and the related automation, which in turn its seem as the "tendency to withdraw as many human elements as possible from production", due to the unreliability of, what an American author calls, the "human operating units." This is the function of all technology but chips do it at an unprecedented scale. Instead of substituting machine for human muscle powers, only now the chips are the substitutes for a large part of human intelligence albeit of computational variety. It can help perform most of the measurement functions more reliably with instant feedback and correction mechanisms as also reducing the time, space and human input constraints from the production process. And most of this productivity and quality gains are achieved through dramatically reducing the labour contact. In the industrialised countries this process has been on for some time now aided as it is by the high labour cost in those countries. In India, however, the industrial structure which largely uses based technology, cheaper labour and relatively expensive new technology has kept it from spreading. Moreover a protectionist and sellers' market as obtains within the country offers little incentive to industry to innovate and modernise further. Besides introducing chip technology entails structural changes including better integration of most aspects of business both in order to be relevant as well as for economy. These factors in a way do not allow one to foresee a pervasive and coordinated introduction of chip technology in the immediate future. This is not to argue that chips will not be used increasingly. In fact, these are two realistic reasons to expect their application being encouraged. First, given the labour displacing character of chips Indian industry may wish to opt for it in a big way to avoid political and organisational cost of industrial labour. This is more likely to happen in those industries or units which can not be broken into small units—vertically or horizontally—such as steel, chemicals, sugar etc. At another level, the chip may be thrust upon or accepted for reasons of glamour rather than need. Desire to establish microprocessor centre in each village stains more from such a preference for glamour.

But to begin with what is the chip technology doing in the industrialised countries. By far the sector where it has found most widespread and significant use is the 'office' sector. Given the employment structure of these industrialised economies the reasons for such a use of chips are not far to seek.

Broadly these economies employ barely one-fourth of their active work force in production process. The rest find place in information handling (40 per cent) and in the service sector (35 per cent).

Impact of Chips technology

This is in the information handling sector, which employs 40 per cent of the active work force, that the impact of chips technology is felt most. The projected unemployment rate due to the use of chips, as estimated by some western experts, in these categories of employment, are 26 per cent in information handling, 22 per cent in industry, 9 per cent in services and 3 per cent in agriculture.

Indian situation is quite in contrast with this. A large majority of work force that is active works for bare survival and not wages. Nearly three fourths of the work force is engaged in agriculture and industry accounts for employing six per cent of it. Services, which include what in the industrialised countries is called information sector, engages nearly three times the workers in industry. The fact that information handling is not considered as a separate category is in a way a reflection on the insignificant nature of this activity itself. Moreover, considering any work unit employing more than ten people without power and 5 persons with power is classified as an industrial unit would reveal that a substantial part of the industrial sector falls outside the possible network where prospect of using chip technology are not be brightest. All this seemingly reduces the adverse impact of introducing chips of employment. But what is critical and what these broad features of labour organisation in the country do not explain, is that yet among the white collar workers, whose number is steadily rising, its impact can not be felt. Thus, while in terms of unemployment or loss of employment opportunity due to the new technology as a proposition of the entire workforce its impact may not be significant, it does have the potential to adversely affect the expanding middle classes by denying the very jobs that have expanded the fastest thus for.

Korean example

Often, this is argued that such a loss of white collar jobs will be offset by the expansion of chip making industry as developing countries have an obvious comparative advantage over the industrialised world in assembling etc. due to low wage labour cost. Historically speaking, this argument can be supported by the cases of South Korea, Taiwan and the like. But the situations have changed now. For, the very processes which were the hall mark of South Korean development have by now been automatised. Much of the pressure for that, apart from technical innovation push, seems to have come from rising wages in these economies. These included the final stage operation of manufacture of microprocessors such as packaging and testing. But the initial operations are far more crucial. Making microprocessors chips is a high precision job. This requires reducing the imputities in Sillicon wagers to one in a hundred million and is followed by marking i.e. oxidation and etching, and chip fabrication i.e. diffusion. Such high precision jobs can be carried out only in ultra-clean environment and the investment required is as high as Rs. 50 crores just for one production line. So far, therefore, such processing has been confined to Silicon Valley in the U. S. and in Japan. With the automation of packaging and testing operations as well, the prospect of cheap labour countries doing these jobs is only shrinking. The falling proportion of Korean exports in the total chip exports is but one pointer to this trend. Economics of scale achieved by integrating all these operations has further reduced the edge of cheap labour economies and the overseas labour component is gradually being already displayed by highly automated domestic assembly in both the U. S. and Japan.

This view is further buttressed by the fact that almost all the new ventures in the field of micro processors are planned outside the boundaries of developing countries. All these factors make the argument that micro processors are labour intensive virtually stand on its head. Even the other much talked about argument of export oriented development of chips is just about as misplaced.

Development of computer programme

Yet, while cheap-labour economies have lost their edge in hardware, one area which still remains labour intensive in development of computer programmes. Software, in the industrialised countries, is still very expensive. In this sphere countries with trained manpower at cheaper costs can do a lot better. Considering the fact that software is a $ 10 billion worldwide market, the Indian experience has not been very encouraging so far with software exports not yet having grown to even $ 10 million. But this is one area where possibilities are still there. Part of the reason is that given the mobility in the upper ladder of professionals and high wages outside, the best of our computer software professionals tend to migrate. Their shortage outside is more than obvious. While American industry alone needs nearly 54000 software professional, its colleges and universities meet barely one fourth of this need. At higher level of expertise the output of American professional institutions is still lower. But while this does point one towards the prospect the brain drain and|or software export possibilities, the employment impact of this technology becomes more than it with all its resources and highly developed and large market for electronics, information management network the American industries need only 54000 plus professionals annually, what can be its impact on Indian economy where unemployment figures run into tons of millions. One can safely argue that for years to come its positive impact will be felt in the upper strata of professionals while affecting a large section of white collar workers adversely. If it is so our eletronics and micro-processor policy will need a fresh look. As it is there is no coherent policy framework for their development which in any case is far more dangerous for it will neither help the growth and development of microprocessors nor will the stated goals of employment generation and export promotion be realised. Lessons of the succesful experiments in the field point towards a bias for selective development of the industry. This should be done sooner than has been want of our policy makers. Needless to say, failure to do so would only mean foregoing whatever little advantages we may have now.

Centre for advanced technology in Madhya Pradesh

THE Department of Atomic Energy has decided to establish a Centre for Advanced Technology (CAT) at Indore in Madhya Pradesh. The Centre will house research and development programmes in such frontier areas as controlled thermonuclear fusion, lasers, advanced accelerators, micro electronics cryogenics, etc. When fully developed, the Centre will occupy an area of about 700 hectares and will employ about 3000 scientists, engineers and technical staff.

GSFC Scheme of financing DG sets

WITH a view to helping the industries to overcome difficulty of power shortage, the Gujarat State Financial Corporation has liberalised its policy for financing power generating sets for captive use. The Corporation has now decided to grant loans for power generating sets to all industries whether they fall under the banned list or not. Further, in order to provide assistance quickly for power generating sets the Corporation has devised a simplified loan application form for this purpose.

Grants to Voluntary Organisations for Health

THE Ministry of Health and Family Welfare has introduced a new scheme called "Private Voluntary Organisations for Health" jointly wih USAID. Under this project, grants will be released to private voluntary organisations to expand and improve basic and preventive Health, Family Planning and Nutrition services for the poor. Preference will be given to areas where the existing services are inadequate in relation to their population.

The project aims at strengthening the ability of the private sector to provide community based health serivces in tribal and rural areas. The project will also cover urban slums to a limited degree.

Expansion of Postal Services

A total financial outlay of Rs. 36 crores has been approved by the Planning Commission for Expansion of Postal Services in the country for the year 1983-84.

It is proposed to utilise the allocation as follows: For expansion of postal net-work a sum of Rs. 362 lakhs will be spent; Rs. 2,600 lakhs will be utilised for the construction of Postal Buildings and staff quarters; For training Rs. 300 lakhs has been set apart; For mechanization and modernisation of postal services a sum of Rs. 118 lakhs will be utilised; For purchase of new mail motor service vehicles a sum of Rs. 136 lakhs will be spent and Rs. 90 lakhs will be spent for RMS vans.

In the sphere of expansion of postal net-work, it is proposed to open 2,500 rural post offices, appoint 1,750 extra departmental delivery agents for strengthening daily delivery of mails and clearance of letter boxes, provide mobile counter service facilities to 1,750 villages and instal 875 additional letter boxes during the next year. Physical targets for other schemes and circle-wise allocation of the targets are being worked out.

Sikkim, an ocean of peace on Himalayan heights

Drinking water schemes and electricity have reached many villages of Sikkim. Old age pension and free legal aid are provided to all people. Ex-servicemen and their families are liberally assisted by the Rajya Sainik Board with loans, aids and stipends to the tune of nearly Rs. 60 *lakhs in the last two years. Sikkim has an excellent road transport system running into* 1400 *kilometres. The Sixth Five Year Plan allocation for the state is as high as Rs.* 123 *crores. Sikkim is full of forests and waterfalls and glaciers in the north and can boast of India's first passenger Helicopter service from Bagdogra to Gangtok.*

HOMI J. H. TALEYARKHAN

BEAUTY IS ONE OF GOD's precious gifts. The youngest and strategically the most vital State of our country, Sikkim has plenty of it. It is an ocean of peace on Himalayan heights. It is as massive in tranquility as its masifs are in altitudes.

Sikkim is rich in flora and fauna. It has the largest variety of orchids in the world, having the best Orchid Sanctuary in India. It has also 600 varieties of birds and butterflies and 45 of the best timbers in the world including Sal, Conifiers, Juniper and the world's third highest peak, the Kanchenjunga, which is the presiding diety of Sikkim, said to have been never set step on by mountaineers out of respect for its sacredness.

In wild life, Sikkim has musk deer whose musk is valued at 60,000 dollars per kilo abroad, blue sheep, red panda, snow leopard, leopard cat, shaepi, the only one of its kind in the world. The yak at high altitudes, is not considered part of wild life and is much used as beast of burden, for its meat and milk. The white tail of a yak, not found too often, is considered very auspicious for religious purposes and compared to the black tail, is very expensive.

Oldest and youngest rocks

The Sikkim Himalayas contain some of the oldest and youngest rocks in history. There are younger dolomite and quartzite (hard rocks) with fossils which are millions of years old. All the rocks in Sikkim, both young and old, have been subjected to intense thrusting movements.

The epochs of accumulation of sediments, their metamorphosis into rocks uplift and subsequent denudation, repeated over millions of years, eventually gave rise to the present topography of Sikkim.

Lying as it does on the Alpine Himalayan Seismic belt, Sikkim Himalayas are geologically active and occasional earthquakes and more often tremours occur. The 1980 earthquake was particularly damaging as the floods of 1968 were disastrous.

Sikkim is full of forests and waterfalls everywhere and glaciers in the North. The Central Glaciological Division works on heights of 18,000 to 20,000 feet, all the time watching and recording in icy climate the movements of the many glaciers which are responsible for the water supply of our country.

Smiling and Peace-Loving people

Thousands of domestic tourists and other visitors flock to Sikkim now by train, road and air. The State has sufficient hotel accommodation in Gangtok in particular with 23 hotels and 900 beds to suit all purses.

In addition there are well appointed Tourist Lodges and Forest and PWD bungalows all over the State on picturesque locations. The visitors are fascinated by the aspects of scenic grandeur and the charm of its simple, smiling and spiritual-minded people.

There is no law and order problem. The people love to live in peace and in a spirit of happy harmony with each other whether they are Nepalis, tribals like Lepchas and Bhutias or plainsmen.

They have an abandon of spontaneity. It takes very little to provoke them into song and dance. Their cultural programmes and festivals are many, lively and colourful. Their tribal dances and the religious dances at monasteries are fascinating.

Largest Monastery

Though Hinduism is the main religion, there are numerous Buddhist monasteries with their picturesque customs, costumes and ritual dances of the Lamas.

The world's largest monastery at Rumtek was presided over by the late His Holiness The Gyalwa Karmapa who was devoted to our country. He was the seventeenth incarnate. The eighteenth incarnate is still to be born.

Sikkim has the world's most renowned Research Institute of Tibetology and other Buddhist Studies which Nehruji had inaugurated.

Naturally being a vital strategic area, Sikkim borders are heavily guarded and the gallantry and heroism, sacrifices and intrepidity of our troops guarding these borders on great heights in icy isolation and still with their morale so high, deserves the nation's highest admiration and gratitude.

Tourism

Being on the borders, of necessity imposes some restrictions on the movement of tourist traffic, particularly of foreigners.

Even so, more than 60 to 65 per cent of the area of the State is open—and every area is as beautiful as the rest to domestic tourists for any length of time and to foreign tourists on permits which have been extended from four to seven days and time for securing the permit reduced from eight weeks to three weeks.

Mountaineers and trekking parties of both foreigners in groups of five or ten accompanied by guides and of domestic trekkers and climbers are allowed to various peaks in the State. Many mountaineering expeditions, military, para-military and civil, have reached various peaks between 18000 to 24000 feet in altitude.

It is not however nature's bounty alone or its festivals and folklore that are Sikkim's sole claim to attention.

Sixth Plan and other allocations

The Sixth five-year plan allocation is as high as Rs. 123 crores as against the total allocation in the preceding 25 years of only Rs. 75 crores. For 1983-84 the Centre has increased the allocation from Rs. 25 to over Rs. 28 crores. The per capita plan outlay is Rs. 946 against all States average of Rs. 140 and per capita Central assistance to Sikkim works out to Rs. 4436 as against All India average of Rs. 238.

In addition, several crores of non-plan allocation is provided and a number of high costing centrally sponsored schemes have been sanctioned and started. By constantly undertaking extensive tours, we try to ensure that the State or Central projects are progressing well and that the benefits of various welfare schemes percolate to the people in the rural areas.

Drinking water schemes and electricity have reached many villages of the State. Old age pensions and free legal aid are provided to all people. Ex-servicemen and their families are liberally assisted by the Rajya Sainik Board with loans, aids and stipends to the tune of nearly Rs. 60 lakhs in the last two years.

Much Better known Now

Sikkim became an integral part of our country in 1975 by the overwhelming will of its people. Since then Sikkim is much better known. The atmosphere of obscurity has been replaced by avenues of dissemination of information and knowledge about this gem in the crown of India.

India's first passenger Helicopter service from Bagdogra to Gangtok and back in twenty five minutes each way twice a week has become very popular. It may also be useful for the movement of cut flowers in future.

Agriculture and Horticulture

There is marked progress in the fields of agriculture and horticulture, irrigation, dairy plants, animal husbandry, cattle, goatery, poultry, piggery, sheep-rearing are most popular.

The ICAR, which has one of the best and biggest of its branches in Gangtok with eminent agricultural scientists working in it, and the 18 State agricultural demonstration centres and sub-centres give guidance to farmers who are assisted with substantial subsidies for their various agricultural requirements by the State Government.

The farmers of Sikkim are most receptive and responsive to modern methods of agriculture and horticulture. In maize (30,000 tons) Sikkim is cent per cent self-sufficient and 70 per cent in rice (11.000 tons) and wheat and barley (1600 tons). Sikkim grows the sweetest mandarins in India.

Sikkim is the largest producer of big cardamom in the world (nearly 4,000 tons) for which a Research. Development and Marketing project worth Rs. 1 crore has been sanctioned by the Government of India.

It is little known that Sikkim's big cardamom is exported to 33 countries albeit in small quantities. Now it will grow both in quantity and value with the new project. The 4,000 farmers engaged on cardamom growing are not getting adequate benefit at present from its sales as much of it goes to the middle man, but under the new scheme their prospects will improve.

The Cardamom Board of the Government of India is functioning at Kabi, 20 kilometres from Gangtok and has its offices in the North District where cardamom is mainly grown.

It has refined the outer cover of the big cardamom which is better flavoured than the small "elaichi".

Other good cash crops in Sikkim are ginger (3500 tons), Soyabean (2100 tons), pulses (2700 tons), potatoes (8600 tons).

Sikkim has good production of riverine fish and has the highest trout hatchery in the world. It has been recommended by the Task Force on Environment that a number of private fish rearing units through village cooperatives could be increased and feasibility surveys of commercially exploitable fish resources could be undertaken.

Industries

Medium scale and small scale industries have been established. Its distilleries and aromatics are the oldest in the North East Region. Its Fruit Preservation Factory sells its products to international airlines.

Sikkim Time Corporation has the biggest assembly of watches in India with a record of 3.50 lakhs this year. It is now manufacturing crowns for watches as well. Sikkim Jewels sells its watch jewels to international companies.

Small Scale Industries

Among the 264 small scale industries are the famed cottage industries training-cum-production centres, making carpets, blankets, shawls, garments, wood work and furniture and various types of handicrafts.

Then there are tanneries, hume pipe factory, hollow bricks factory, bakeries, biscuit making units, plastic units, tiny tyre retreading units, handloom and power looms, village level maize and wheat grinding units, gobar gas plants, printing presses, match and bidi making, candle, soap and detergent powder units, small workshops, etc. Some cigarette factories have also come up.

Many of the industrial units both in medium and small scale are either Government-owned, joint ventures or private. We are now trying to introduce industrial cooperatives also. Application of Central excise duty is now under the active consideration of the Government of India for being levied in Sikkim. The State will get 45 per cent of it as its share.

Four industrial estates have been set up in various parts of the State with sheds. One State Government Industrial Training Institute (I. T. I.) with a hostel for 100 trainees is functioning at Rangpo, near Gangtok. This Institute trains technicians for meeting the demand of new and existing industries. The training is imparted in seven trades-motor mechanics, civil draughtsmen, fitters, wiremen, welders, plumbers and cutting and tailoring for women.

The Khadi and Village Industries Board is also providing training to the rural people for such industries. It has several centres in the State.

Central subsidy and other incentives

Being industrially backward, all locally started industries are eligible for Central Investment and Transport Subsidy.

In addition, subsidy is available on interest actually paid by the small scale units with investment up to Rs. 2 lakhs to the extent of differential on the rate of interest charged by the financial institutions like the banks over and above 9 per cent actually payable by the units.

50 per cent of the actual charge on consumption of power by small scale units with the same limit of investment is also subsidized on receipt of the necessary certificate from the Department of Power.

All local small scale units again with same limit of investment are also exempt from payment of sales tax for a period of three years from the date of their starting the production.

Again, S. S. I. units which pay sales tax on purchase of machinery, equipment and raw materials whether purchased locally or brought from other States, 50 per cent relief as outright grant for three years from date of production is provided.

Price Preference

Price preference to the tune of 15 per cent is also considered on purchases made by various State Government Departments. Meeting publicity costs to the extent of 25 per cent of actuals is also allowed for SSI Units.

Machinery on hire purchase basis for local S.S.I. units is also provided where possible by SIDICO, and National Small Industries Corporation.

Pre-operative expenses to the extent of 50 per cent for project report preparation, training and consultancy are also provided for the local small entrepreneurs.

Scope for Electronics

Being climatically so well suited, as mentioned earlier, there is excellent scope for various types of electronic industry particularly assembly oriented products like TV and radio receivers, mini megaphones, casette recorders, electronic lanterns, voltage stabilizers, digital watches, dry cells, etc.

Ancillaries for production of P.C.B.s, Cables and transformers, TV cabinets (with traditional Sikkimese designs), solder wire, plastic injection moulded goods, speakers, TV antennas, band switches, bolts and screws, steel washers should have good scope in the future. An Electronic Test and Development Centre would be needed for development of such industries.

Agro-Based Industries

There are also good prospects for agro-based industries like quality agricultural implements in view of the growing agro-forestry developments, pesticide formulations, pickles as a home industry for women from ginger and labshi so well grown in Sikkim.

There is considerable potentiality for growing and marketing of canned edible mushrooms as it would greatly benefit the poor people in rural areas living at high altitudes. This industry is making good headway in other States.

Forest-Based Industries

Forest based industry with good scope in Sikkim include pencil slate from juniper wood, tea chest battens, wooden cable drums for ACSR conductors, industries based on medical plants or herbs.

Processing of essential oil bearing plants, and other miscellaneous small industries like umbrellas, ceramic candles for water filters, metal cans and containers, alluminium enamelled wire, builders' hardware, ready-made garments (already being done).

The Government of India Task Force on Industries has recommended setting up of a Development Corporation for the development of all these industries.

No unemployment, No Taxes

There is no unemployment in Sikkim though there may be some under-employment. There are no labour unions, no labour trouble or strikes and so far—but not for long—no taxes.

Free Schools Every two kilometres

In social services like in education, there are schools at every two kliometres all over the State some with hostels. Education is free up to the 12th standard. So are textbooks for primary school children and children of ex-Servicemen. A Rs. 1 crore project for a new Central School (Kendriya Vidyalaya) with a Sports Hostel has just been sanctioned by Government of India and land provided by State Government.

"Each One Teach One" project for children not able to go to schools for economic reasons has gained momentum. Sikkim will soon have a Central University with faculties germane to its conditions. It has already got colleges for arts, science, commerce and law.

Proper care of health and facilities for medical treatment are provided through 5 hospitals and 65 Primary Health Centres and Sub-Centres. Generally the people are healthy.

Cooperative Movement

Sikkim's cooperative movement has gained considerable momentum since it was merged into our country. Today, there are 150 cooperative societies and 78 milk societies all helping the farming class.

There are two modern pasteurisation plants, one at Rachetong in the West, the other at Tadong near Gangtok in the East. We might shortly have industrial cooperatives also in rural areas.

Banking Integration

Sikkim has introduced banking integration which means that several branches of nationalized banks like State Bank of India, Central Bank, United Commercial Bank in addition to the State Bank of Sikkim, have been opened in various parts of the State, particularly in the rural areas where small farmers, craftsmen, traders, shopkeepers small and tiny industries are helped with loans up to Rs. 5000 on DRI rate of only 4 per cent.

So far, there are sixteen branches of such banks which make Sikkim rank the third best in the country and by the time seven more branches, which have been sanctioned by the R.B.I. on our request, are opened, Sikkim will stand first in the country on the basis of the number of people served per branch.

In addition to these branches, Credit Camps are also organized by various nationalized banks in remote parts to make loans available to the rural people on the spot. It may be added that the rate of recovery is very commendable among the people of Sikkim.

Forest Wealth Protected

The 37 per cent forest wealth of the State is very well protected now and there is no degradation or cutting of trees as there used to be.

Eighty lakh saplings have been planted within the last two years and almost all of them are thriving.

Roads and Bridges

Sikkim has an excellent road transport system running into 1400 kilometres, the national highway constructed and maintained by the Border Roads Organization and the rest by Sikkim P.W.D.

Sikkim has 250 sturdy bridges, both vehicular and pedestrian criss-crossing the rivers. The highest bridge in Asia is at Rang Rang in the North and the first ever cable-stayed bridge in the country is under construction between Jorehang and Naya Bazar in the South-West.

The road from Bagdogra to Gangtok, four hours long, is enchantingly accousted by the Teesta river almost all the way.

Like all hill regions, Sikkim suffers from landslides during the rains, but the damage mostly to roads is quickly repaired by the Border Roads Organisation. Shortly the Border Roads Organisation will also undertake the work of a Rs. 6 crore worth bypass for Gangtok to relieve the pressure of traffic within the capital.

Power Generation Potentiality

Sikkim has sufficient water resources to generate power up to 2,000 megawatts. Investigations of the India's biggest centrally-sponsored power project of 1,000 M.W. in North Sikkim are nearing completion.

Work on a 60 M.W., again a Centrally sponsored scheme in West Sikkim, to cost Rs. 100 crore is about to begin. At present, here are five power projects in operation.

The climate is so alluring that one yields to the ingratiating mood of the day, be it sunny with the galaxy and gallery of snow-clad Himalayan peaks or cold, cloudy and foggy with a breakthrough of sunlight which comes like a flash of revelation, sending one in a musing ecstasy of contemplation. □

Model cooperative bill proposed

A model Bill on cooperatives is proposed to be introduced in Parliament shortly. The Bill would seek to rectify some of the lacuna found in the co-operative legislation in States. This was announced by the Union Agriculture and Cooperation Minister, Rao Birendra Singh while inaugurating a two-day conference of the Registrars of coperative socities in New Delhi, recently.

Women should be equal partners in handloom sector

This is a special report on potential for full employment of women in the weaver's households in Mahesana District of Gujarat. The study was Conducted between Nov. '81 and Sept. '82 by a dedicated youngman from weavers' community. The report recommends that wherever ready made beam is provided to male weavers-an extra beam should be provided for the woman, in the same household.

PROF. RAMESH M. BHATT

LARGE NUMBER OF WOMEN are engaged in Handloom sector either as weavers or as supportive workers in pre-weaving and post-weaving activities. The estimate of active looms in Gujarat varies anywhere from 10,000 to 15,000. In Gujarat there are 7 lakh members of traditional weavers' community.

An Organisation, foundation of Public Interest, has worked on a detailed report on 'Handloom Weavers of Dholka', after completing the field-work on one thuosand weavers' households of Mahesana District, for preparing a report for their comprehensive developments. Along with the data collected for preparing the Report on the Development of Handloom Weavers of Mahesana District, specific data on the women's involvement in this craft and their skill-level were also collected.

The present study was conducted between Nov. '81 and Sept. '82, through visiting 1010 households in more than 125 villages. Entire filed-work has been done by Shri Ishwarbhai Makwana, who was not a field-worker in usual sense of the work, but a dedicated young man from the weavers' community, who has weavers cause at his heart.

Joint family system is quite prevalent amongst the weavers households, there are 1953 adult women amongst 1010 households. Out of them 60 per cent are in the age group of 15 to 35 years. If they are trained to work on handlooms, they can conveniently earn from Rs. 200 to Rs. 500 per month.

Literacy among women: women, who have studied beyond 7th standard, and are willing to work, have prospects of getting jobs because of reservation of posts in the Government and semi-Government organisations. However, proportion of such eligible women is only 15 per cent. The rest of the women have maximum scope for work or job within handloom sector. If they are provided training in weaving they can earn supplementary income or full-time income from this occupation. Those who have gone to school and have received education from 1st to 7th standard, have higher trainability. 42.80 per cent women are illiterate. Among them those who are not in the higher age-groups, can also be considered eligible for training. In absolute terms, if we can train 1295 women engaged in pre-weaving activities, for actual weaving, we can plan not only for training programme but also for income-supplementation and full employment programmes.

Table—I

Educational level-wise classification of girls of school-going age in weavers' households.

Level of education	No. of girls	Percentage
Illiterate	120	19.76
Std. 1 to 4.	311	51.23
,, 5 to 7	135	22.28
,, 8 to 9	031	5.10
,' 10 to 12	004	0.65
Pre-School	006	0.98
Total	607	100.00

Data on the educational level of the girls of school-going age includes girls from the age of 6 to 15 years. Out of the age-group, 120 (19.76 per cent) do not attend the school. Those who are in secondary level are hardly 5 to 7 per cent. This trend is not likely to have any notable change in the near future. On this basis, only a small percentage of girls will be able to get jobs out of public policy of reservation of posts. The majority will have to find jobs elsewhere. If they want to earn supplementary income or income from full-time job, the easiest and most convenient occupation they can be trained for and find employment is handloom-weaving. If training facilities are provided they can easily earn Rs. 200 to Rs. 500 per month, in their own homes.

About 1259 adult women and 566 girls of school-going age, totaling up to 1825, are eligible for training in handloom weaving. It is likely that all women may not prefer to go for training outside their homes or even within their homes. However, out of the eligible 1825 women, atleast 1,000 wo-

women can optimisticaly be trained and be made self-reliant earners. There are other supportive reasons also to believe that they will be willing to undergo training.

At present 950 i.e. 50 per cent women are actively engaged in activities related to handloom weaving. Wide-spread participation of women in activities pertaining to weaving, clearly indicates that they are not only familiar with handloom weaving, but also can, after suitable training, take up actual weaving, and can start earning independently. At present, they are not paid for all the pre-weaving preparations they do. However, if they can start weaving, they will begin to earn additional income for themselves and for their households.

As the women have been accustomed to report and investigators habituated to record, 89 per cent of the women are recorded as doing household work. Though they carry out number of economic activities to supplement or support the household, it is not reported and recorded. Inspite of this constraint 167 women have reported doing other economic activities, and the most significant occupation has been weaving. 38.89 per cent of women are engaged in weaving as a subsidiary occupation. While about 2.56 per cent, work as labourers.

Whenever one loom is active and a male-member of the household is working on it, 1.5 additional persons are required to keep it going. They are mostly women and children of the household. Thus every active handloom is always backed up by a woman-worker. Whenever we think or plan for the development of the handloom sector, it must unfailingly include the full utilisation of women-power. Their skills must be upgraded and they should be fully rewarded for the work they do and skills they utilise.

Two important steps are being taken for the development of the handloom industry, in Gujarat.—

(a) Improved looms, equipments and techniques are being introduced in handloom sector, and

(b) To produce cloth of standard quality, the weavers are being provided readymade beams. This not only ensures standard quality of cloth. but also increases production and the earnings of the weavers. This change is most welcome and should be speedily introduced for handlooms in the co-operative sector also.

However, providing of readymade beams will adversely affect thousands of women who are engaged in pre-weaving process. It will destroy whatever skills they possess at present. They will be delinked from the handloom industry or are likely to be pushed out of the industry. Their potential for doing supplementary or full-time work will be annihilated. When handloom industry is fast expanding and is becoming more paying, the women folk of the weavers' households should not be deprived of the gains and benefits of development. In fact, they should be made equal partners of development.

To avoid such an undesirable and avoidable possibility, following positive steps should be urgently taken.

(a) All the women in the weavers households, should be provided facilities for upgrading their skills either in their own villages or through residential training centres.

(b) On completion of training, every woman-worker should be given an independent loom on which she can earn her separate income. Even if a male-member is working on one loom, she should be given second loom. In substance, each weaver's family should have two looms and a campaign should be launched to introduce second loom in every weaver's family. ☐

Postal life insurance declares higher Bonus

In respect of Postal Life Insurance (PLI) Policies which were in force on March 31, 1981 and which continued to be in force on March 31, 1982 the Government has announced a higher rate of bonus.

A simple reversionary bonus has been declared at the rate of Rs. 44 per thousand sum assured per annum for whole life policies and Rs. 35 for endowment policies for the period from April 1, 1978 to March 31, 1981.

Policies becoming due for payment between April 1, 1982 and ending 12 months from the date of the next valuation shall be paid bonus at Rs 44 and Rs. 35 per thousand sum assured per annum for whole life and endowment assurance policies, respectively.

The total number of PLI policies in force were 9,29,997 and the total sum assured was Rs. 590.37 crores and the fund balance was Rs. 157.28 crores as on March 31, 1982.

The total number of policies in force were 8,36455 and the total sum assured was Rs. 491.78 crores with a fund balance of Rs. 129.70 crores at the end of March, 1981

Projecting India's Image in International Market

THE Ministries of External Affairs and Commerce have sponsored a publication titled 'INDIA—YOUR PARTNER IN DEVELOPMENT' to project India's capabilities, achievements and expertise in overseas markets. This publication is to be brought out initially in English and preferably in French, Spanish and Arabic, to bridge the information gap in the international market. It will be widely distributed to the Heads of State Government and decision making authorities at the important international conference such as Commonwealth Meeting in New Delhi, UNCTAD VI in Belgrade, etc.

In Haryana, after green and white it is yellow revolution

SHIPA ZED

HARYANA is on the threshold of "yellow revolution" after coming out successful in green revolution and white revolution, says Mr. Krishna Mohan Mehrotra, Chief Executive Officer of the Rohtak District Rural Development Agency.

The State Government is making all-out efforts for this revolution which is to be achieved through increased egg production. This besides providing nutritious diet, will also increase unemployment and provide agricultural fertilizer in the form of poultry manure. The poultry farming in Haryana has changed its face in a big way from backyard keeping to commercial and agro-based industry. The rapid growth of urbanisation and industrialisation and fast changing taboo of Haryanvis against egg-eating, has multiplied the demand of eggs and chicken in this region.

The semi-intensive system of poultry production of the past is being replaced by the intensive deep litter sytem in phased manner in Haryna. Mostly the educated unemployed and ex-servicemen have gone in for poultry farming in Haryana. The great demand of poultry products in Delhi has made Faridabad, Gurgaon, Karnal, Rohtak and Sonepat districts the main centres of poultry production.

A few district Rural Development Agencies have undertaken marketing of eggs of poultry farmers in order to ensure good price to the farmer and to eliminate the middle man. These agencies have matador vans for lifting the eggs. For selling these eggs, the agency invites quotations and the dealer with highest rate is given the contract.

The Rohtak District Rural Development Agency lifted nearly two lakh twenty thousand eggs during the last nine months and the average rate provided to the farmers was forty-five paise per egg. Lifting of eggs is done on Mondays and Thursdays by a Government poultry inspector who deposits the sale money in the agency and farmers are given poultry feed in its return at their-doorstep from where these eggs were lifted.

The Rohtak district agency has proposed to establish a poultry demonstration-cum-training centre, costing eighty thousand rupees. This will provide inputs for training, disease diagnosis, demonstration and establishment of poultry units.

More money for rural drinking water supply

THE Ministry of Works and Housing has released more money as grant-in-aid for some States and Union Territories for execution of schemes under the Centrally Sponsored Accelerated Rural Water Supply Programme.

An amount of Rs. 175.48 lakhs has been given to the State of Orissa representing the third instalment of grant-in-aid for 1982-83. In the first two instalments an amount of Rs. 591.02 lakhs was released to the State.

For Tripura an amount of Rs. 61.50 lakhs has been released as second instalment. Tripura got Rs. 20 lakhs as the first instalment for the current financial year.

For expenditure on Monitoring and Inspection Units under the same programme Jammu and Kashmir has been given Rs. 2.50 lakhs, Meghalaya Rs. 2.15 lakhs and Mizoram Rs. 1.50 lakhs.

BHEL Hardwar doubles output

THE output of the Hardwar Plant of the Bharat Heavy Electricals Limited has been doubled over the last five years without any increase, whatsoever, in manpower. From an output of Rs. 122 crores in 1977-78, the Plant is set for an output of Rs. 247 crores in the current financial year 1982-83. The staff-strength of 10,606 as on 1st April 1978 continues to be almost the same even today. The Hardwar Plan is being further expanded and modernised to meet the requirements of electricity boards for super thermal sets of 500 MW and even 1000 MW. This is being done under the L.S.T.G. Project.

Research and Development of Cardamom

OPENING the 20th S.B.I. Credit Camp at Tintek and Rakdong (East District) recently, Shri Homi J. H. Taleyarkhan, Governor of Sikkim, distributed 56 sanction letters of S.B.I. loans amounting to Rs. 65,000 to small and marginal farmers and growers of big cardamom which is the biggest cash crop in Sikkim and of its kind in the world.

The Governor mentioned that Rs. 1 crore centrally sponsored Sikkim Cardamom Research and Development Centre, with marketing facilities, was provided for the welfare of the cardamom growers of Sikkim who should seek necessary guidance and help from the centre. Governor also disclosed that the 50 acres for Central Research Development Project has been decided to be made available at Panthang, 10 acres have already been handed over.

20-Point Programme in Assam

Supply of electricity & water Targets achieved in Assam

The 20-Point Programme is part of our Sixth Five Year Plan and constitutes the core of planning activity. During Sixth Plan it is planned to provide drinking water to 4600 more villages. Power consumption shall be raised from 30 units to 90 units. What is to be achieved in the Sixth Plan will be higher than the cumulative total of all the previous plans. Put together total outlay of Rs. 1115 crores during the Sixth Plan is also higher than the total of the previous Plans.

J. K. Bagchi I.A.S.

WE ARE ABOUT to complete one year since the new 20-Point Programme was launched in the State. It may therefore be appropriate to take a close look at the overall profile in this juncture.

Before one tries to do so, it may be worthwhile to have some broad idea about the perspective and the overall developmental progress achieved in this State in the last 3 or 4 years. According to all indicators of economic backwardness, Assam lags behind the national standard. Our crop intensity is low, fertiliser consumption around 3 or 4 kg. per hectare as against the national average of 30 kg. per hectare and overall yield lower than the national average. We are trying to reach the national average through a comprehensive programme of increased fertiliser consumption, better coverage of high-yielding varieties and irrigation facilities. In the industrial sector also, we are to cover a lot of ground and our consumption of power had been only 30 units at the beginning of the Sixth Plan as against the national average of 130 units. In the social services sector, as many as 16 thousand villages remained to be covered for water supply out of the estimated 19 thousand problem villages in the State at the beginning of the Sixth Plan. In the field of rural electrification also, we could cover only 4 thousand villages at the beginning of the Sixth Plan as against around 22 thousand villages in the State. All these facts clearly show the level of economic backwardness and the lee-way that has to be made up in the Sixth Plan. It is essential to keep this perspective in mind while evaluating the overall performance.

Special Relevance to Assam

The 20-Point Programme is part of our Sixth Plan and constitutes the core of our planning activity. It has special relevance to Assam which has more than 43 per cent of population belonging to Scheduled Castes, Scheduled Tribes and other backward classes. It is in consideration of these important factors that over 70 per cent of the State's Plan outlay has been earmarked for schemes under the 20-Point Programme.

Because of the need to bring about economic development and social transformation, the State's planning strategy aim to cover substantial ground in the Sixth Plan itself. As against 4 thousand villages electrified upto the end of the 5th Plan, we are going to electrify 6 thousand villages in the Sixth Plan. As against about 4 thousand villages provided with drinking water till the end of the Fifth Plan, we propose to cover 8,600 villages during the Sixth Plan. Similarly, power generation schemes have been taken in hand which will raise the power consumption from 30 units to 90 units. In the agricultural field, our aim is to reach the national average of around 1300 to 1400 kg. per hectare from the level of 900 kg. per hectare at the beginning of the Plan. It will be apparent from the above that what we are planning to achieve in the Sixth Plan is much higher than the cumulative total in all the previous Plans put together. Our total outlay of Rs. 1115 crores during the Sixth Plan is also higher than the total of the previous Plans. Since every economic activity and level of development are intimately linked with the various linkages organisational, attitudinal and institutional, any plan which seeks to raise the developmental level to such a considerable extent, is likely to face the challenging task of integrating various parameters of development. Assam has been no exception.

Steps Taken

I shall briefly touch upon the important steps that the Government have taken in the current year ever since the 20-Point Programme had been announced. Targets have been disaggregated quite early during the year. Arrangements for inspection, concurrent evaluation and cross verifications have also been laid down. Officers have been made accountable and good work done in any field would be commended by the Government. The State Level Advisory Committee chaired by the Governor and the official Steering Committee chaired by the Adviser are meeting regularly. Non-official committees as well as official committees have been constituted at the District and Block Level also with representatives from voluntary organisations, Scheduled Castes, Scheduled Tribes and women etc. In order to attract private investment, a comprehensive package of incentives has been finalised and the industrial policy of the State has been announced. A new Department has been constituted for Science, Technology and Environment. The BDOs have been brought under the direct control of DCs and High Level Committees have been formed to review the working of ASEB|ASRTC.

Encouraging Results

The steps taken so far have already started producing results. Although we have a long way to go, signs of promise are distinctly visible in the horizon. Our agricultural production in the current year is likely to touch the highest level recorded in Assam. In jute, where we had lowest yield in the country few years ago the position has reversed, and we are now having one of the highest yield. Targets have been achieved so far in rural electrification and drinking water supply and there is very expectation that this year also the targets will be achieved. Our performance in the forestry sector, particularly in social forestry, has been particularly impressive, and our coverage is one of the highest in the country. In the small industries sector, 75 per cent of the target of eight hundred in the small industries has already been covered so far generating additional employment. In NREP, 90 per cent man-days aggregating to 53 lakhs were generated during the last year and we are taking special steps to ensure that the coverage is maintained in the current year.

In certain sectors, however, our performance so far has not been upto the desired expectation and we propose to take special steps to improve our performance. One such area is IRDP where finance is one of the biggest bottlenecks and dialogue with the financing authorities has been initiated at various levels. In land reforms, pump energisation, sericulture and weaving, irrigation and primary health care, we have to make special efforts during the remaining part of the current year so that targets are achieved. The Steering Committee is reviewing the progress of the slow moving sectors regularly and giving necessary guidance and direction. Since construction activities in Assam can start only after the monsoons, we have to concentrate all our energies during the remaining part of the current year to achieve the task.

There are, however, a large number of constraints of locational, organisational, institutional nature. In spite of those constraints and in spite of our past level of economic undevelopment, concerted efforts are being made through the 20-Point Programme so as to bring about a social transformation and developments of a better and prosperous Assam. In this task, what is of utmost importance is the actual implementation at the field level and popular participation. In our quest for economic development, many adjustments might be necessary in the light of the experience gained from time to time. What, however, cannot be compromised is our commitment, to the task. ☐

HP Irrigation Projects Approved

The Planning Commission has approved the Dejla Dewda and Dekariya Tank irrigation projects of Madhya Prodesh at the total estimated cost of Rs. 18.72 crores.

The Dejla Dewda project envisages construction of a storage reservoir near village Dejla Dewda, district West Nimar of the State across the river Kundi, a tributory of river Narmada. The command area in the right bank of the river in the initial reaches is hilly and part of the area in the downstream would be covered by Banganga and Garigalter, tank projects under construction.

When completed, this project will provide irrigation to 12,150 hectares.

The Dekariya tank project envisages construction of a storage reservoir near Nagjhar in Balaghat district of Madhya Pradesh and a pick up weir downstream across Dekariya nalla, a tributory of Chandan| Wainganga river in the Godavari basin.

Imphal Barrage Project

The Planning Commission has also approved the revised estimate of Imphal Barrage at a cost of Rs. 4.62 crores.

The project envisages construction of a barrage across Imphal river to irrigate 6,400 hectares annually in the Central District of the State. The revised estimate covers only some changes in designs of barrage and canals.

Formed Coke : A Technological Success

ONE hundred tonnes of formed coke using non-caking low phosphorus Chirimiri and Churcha Coals, produced by CFRI in a 1 tonne per hour plant, was tested for its suitability to replace conventional coke in the trial runs conducted in the low shaft furnace of Kalinga Iron Works at Barbil recently for the production of Pig Iron. The persistent R&D efforts by CFRI towards conserving the depleting reserves of coking coal and substituting them with non-conventional forms of coke, have paid rich dividends in one more technological development now. The trial runs were remarkably successful.

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GANDHI—the Maker of New India

davp 82/ 579

Success Stories

A legless finds his feet

WE shouted to the man at the Paan shop to send us Paans. But the Paan-vendor requested us to walk to get the paans from his shop. Disgusted I reached there. To find that the shopkeeper was legless. My anger turned into anxiety and I asked him how he runs the shop named 'Naseeb'.

He told me that he used to beg at the bus stand in Chandrapur. But one day the Mahabank cashier Shri Khare, saw him and persuaded him to try to be self sufficient. The Mahabank of Mul advanced him Rs. 2600 to set up a Paan shop. It also helped him to get a wheel chair.

Now the legless Anand Raut is on sound footing.

R. G. Pujari,
Field Publicity Officer
Chandrapur

Gramin Bank helps poors

SINCE its inception five years ago, the Gangakhed branch of Marathwada Gramin Bank has advanced about Rs. 18 lakhs to needy beneficiaries in the taluka. While 138 labourer sought loans for buying cows and buffaloes, 179 villagers took loans to set up cattle sheds.

A landless labourer Parameshwar Patloba received a loan of Rs. 3600 to purchase buffaloes and goats. Now he has repaid the whole loan and sells some 20 litres of milk daily to Gangakhed town.

Ramrao Murkute a small farmer from Zola village near Gangakhed has received a sum of Rs. 5600|- for buying a thresher.

The MGB has also advanced a sum of Rs. 3000|- to Ranaba Salve, a tribal of Zola to buy a pair of buffaloes. As he repaid on time, he also received a loan of Rs. 1500|- to construct cattle sheds.

R. G. Pujari
Field Publicity Officer
Chandrapur

Nehru Jayanti Rural Youth Camp

NEHRU Yuvak Kendra volunteers of the Pudukettai District camped in the Malasivapuri village of Ponnamaravathi Block from 9 to 14 November. In this Youth Leadership Training Programme 50 rural Youths of the district participated. As part of the Nehru Jayanthi Camp, the youth volunteers undertook the cleanliness campaign by weeding out the thorny bushes grown around the village water tank. Impressed by the contribution of the campers, 60 women of the village offered their 'Shramdan'. 500 seedlings of Eucalyptus were planted in the village. On the Nehru Jayanthi Day, they arranged cultural programme titled 'Bharatha Matha' for the children of the village stressing the theme of 'Unity in Diversity'.

S. Subramaniam
Field Publicity Officer
Trichy

Senthurai Block Office show the way

SENTHURAI Block Office in Tiruchirapalli District of Tamil Nadu has been given face lift with the establishment of a fodder farm in the back yard of the office premises spreading over 0.5 hectare vacant land. Tht barren ground was converted into the fodder farm at a cost of Rs. 2,100 in December '79 under the Intensive fodder cultivation Scheme. This venture begun to yield profit from the subsequent year. In 1980-81, the Senthurai Block office netted the profit of Rs. 2,672. The profit had gone upto Rs. 10,306|- in the year of 1981-82 following the sale of B. N. 2 grass and the seedlings of 'Koobabul'. 500 Koobabul trees were planted last year in the Block Office premises under the social forestry scheme of Prime Minister's 20 Point Programme. This model farm has inspired 25 farmers to cultivate B. N. 2 grass and 'Koobabul' tree in their farms. Farmers from the three districts of Tiruchirapalli, Pudukettai and Thanjavur, have collected the seedlings and the grass pods from this farm.

This fodder farm run by the Block Office is the only profit-making farm in the entire state of Tamil Nadu. Credit for it goes to the Block Extension Officer for Animal Husbandry, Shri D. Rajamanickam who is incharge of the farm.

S. Subramaniam
Field Publicity Officer
Trichy.

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Surjit Singh Barnala—Akali Party Leader and former Union Agriculture Minister; Dr. S. Tripathy—formerly Director of Evaluation, Government of Orissa; **S. Venu**—Management Consultant, Madras; **J. N. Chaubey**—Deputy Commissioner, Bijapur, Karnataka; **Dr. Sachi G. Dastidar**—Associate Professor, College at Old Westbury, New York; **R. C. Srinivasan**—Senior Research Officer, Planning Commission; **Satish Jha**—Asstt. Editor, Financial Express; **Homi J. H. Taleyarkhan**—Governor of Sikkim; **Prof. Ramesh M. Bhatt**—Foundation for Public Interest, Ahmedabad; **Shipa Zed**—Freelance Journalist, Rohtak, Haryana; **J. K. Bagchi**—IAS, Commissioner, Planning and Development, Government of Assam; **Bhupinder Singh**—Information Officer, Press Information Bureau, Jullandar.

Books

Emerging Developing Countries

The Emerging Developing Countries; P. G. Salve; Intellectual Publishing House, New Delhi; pp. 195; prices Rs. 80.

THE author, an erstwhile civil servant in the commerce ministry, has to his credit five earlier books of topical relevance in the field of national and international economic affairs, which appeared quite spasmodically from 1947 to 1978. If the present volume is any indication, there is no denying that his position as a Government functionary has gone a long way in evolving his expertise out of his academic powers and inherent flair for pondering over the economic issues of the world coming to his notice from time to time.

The work under review, the latest from the author, covers a long drawn out burning problem of the developing countries including the oil rich nations, skilfully reflected in the content of the ever growing economy of the developed world powers. The lay out of the study constitutes as many as nine chapters in which he has dwelt upon, inter alia, problems facing the developing countries, their economic development, part played by oil-money, foreign aid, some implications of the New International Economic Order. In the vast international Economic Order. In the vast international perspective depicted by him, the author has proved beyond doubt that the gulf between the rich and poor countries in the matter of economic development, is widening and is not susceptible of abridgement under the existing policies of the nations at the receiving or the giving end.

Consequently, the author suggests "a rapid and efficient transfer of technology to the developing countries, in a way that leads to domestic production satisfying local needs and employment." He concludes with the hope that both rich and poor countries stand to gain firm measures that increase purchasing power in developing countries."

Throughout the lucid narrative of the volumes, the veritable acumen of the author has stuch to its own to maintain a crystal clear readability destined to draw vast readership. The volume is exquisitely brought out and priced accordingly.

Rashmi Khurana

Identifying Industrial Sickness

Industrial sickness: Identification and Rehabilitation; by S. N. Bidani and P. K. Mitra, Vision Books, New Delhi, pp. 189; Price Rs. 95.

BOTH the authors of the book under review are mechanical engineers with post-graduate diplomas in industrial management and business administration. As such their analysis of what contributes and constitutes industrial sickness serves serious attention.

They proceed on the analogy of industry being conceived in totality and compare it to a human body. Just as a general medical practitioner studies the human anatomy in its totality before diagnosing physical ailments and prescribing remedies, the authors have done well to applying the same principle to an industry. Perhaps this new approach may yield better results.

They have studied the problem of industrial sickness from various angles : concept of an industry in its totality, identification of sickness, factors causing sickness, identifying such sickness, and remedial measures to be taken in time and rehabilitation measures more or less in a traditional way.

Their concessions, however, are circumscribed by the limitations of a rather narrow understanding of an industry. For instance, they conceive an industry as a manufacturing unit and feel that sickness can be prevented by a harmonious cooperation of finance, technology, management and labour relations. Any distortion in any of these factors may bring about sickness in an industry. And banking institutions which finance industrial ventures have to keep in mind constantly the harmonious and delicate balance of all these factors. True but where is something more than these which might cause industrial sickness.

For instance, the successful functioning of an industry in the modern context depends on a large number of external factors. The success of an industry is not solely determined by the adequacies of finance, technology, business and industrial management and cooperation of labour. Industry does not manufacture goods or function for the sake of industry. Its products must be sold and absorbed in the society. Modern trends of increasing protectionism among the industrially developed countries of the West, world wide depression trends, high cost of finance and challenging patterns of consumers' behaviour may well cause industrial sickness.

While the authors seem to have emphasised on the traditional norms for correcting industrial sickness, it is rather unfortunate that the new factors mentioned above have not been thought of by them. However the book serves a limited purpose as a dependable guide to bankers, financial institutions and industrial consultants who help frame industrial health. The reviewer feels sincerely and honestly that the authors should have done well to make a study of the external factors which cause industrial sickness. If they had done so and thrown some light as to how these adverse factors could be avoided or at least their deleterious effects minimised the book would have been more valuable and rewarding.

E. P. Radhakrishnan

The Choksi Committee alternative

The Choksi Committee had also recommended two alternatives—the States could follow the procedure under which they had empowered the Centre to levy estate duty on agricultural land or, the definition of agricultural income under the Income-tax Act could be restricted only to agricultural activities relating to food crops so that all other type of agricultural incomes of a commercial nature including income from plantation, cash crops, etc., would be classified as non-agricultural income and as a consequence, the levy of tax on such income by the Centre would be within the legislative powers of Parliament.

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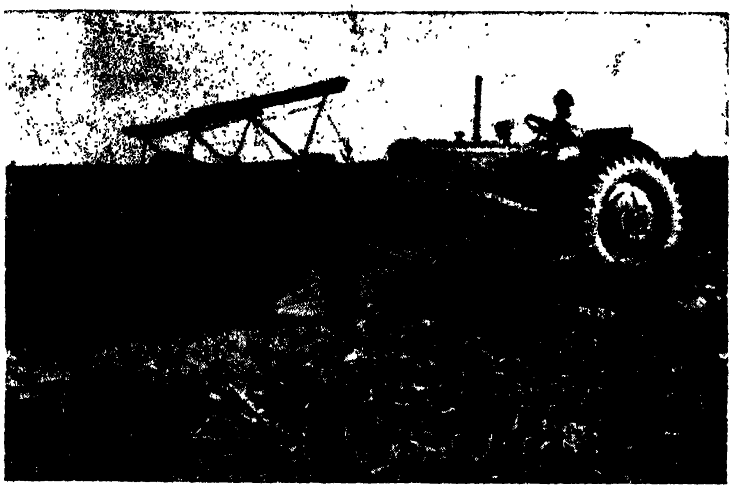

Poor response from States to tax farm income

The Union Finance Ministry is reported to be rather disappointed with the not too good response from States to levy farm tax with a view to mobilising the excess income of the well-to-do farmers. Only seven states, viz., Assam, Karnataka, Kerala, Maharashtra, Tamil Nadu, Tripura and West Bengal had responded positively. The total revenue from these states amounted to Rs. 4,639.99 *lakhs in* 1980-81, *Rs.* 4,108.50 *lakhs in* 1981-82 *and is estimated to be Rs.* 4,556.86 *lakhs in* 1982-83.

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Do well we must,
but how?

VOL 27 NO 7

yojana

APRIL 16-30, 1983 RUPEE ONE

A CLOSE LOOK AT
THE SCENARIO

B. Sivaraman

NEXT ISSUE
WHY LABOUR
UNREST ?

The 20-point programme monitoring cell reports . . .

9A

House Sites

The New 20-Point Programme is the crucial step for all round promotion of social justice and economic growth, with emphasis on schemes and measures which take the benefits of development directly to the weaker sections.

Here we report the progress achieved in respect of the three points, viz., house sites, pumpsets energised and family planning (sterilisation).

The implementation of the rural house-sites programme has been stepped up substantially. As against a target of 10.43 lakhs, 8.16 lakhs families (78.2%) have been covered upto February 1983. State-wise performance above 50% of the required average is given below :

State	Target	Achievement April—Feb.	% achieved
Gujarat	40,000	98,844	247.1
Rajasthan	50,000	91,498	183.0
Uttar Pradesh	70,000	97,631	139.5
Madhya Pradesh	15,400	20,976	136.2
Tamil Nadu	80,000	99,663	124.6
Himachal Pradesh	40	40	100.0
Karnataka	1,50,490	1,25,375	83.3
Haryana	20,000	14,702	73.5
Tripura	6,500	4,033	62.0
Andhra Pradesh	3,44,030	2,01,846	58.7

YOJANA

Volume 27 Number 7

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A close look at the scenario

Arguing that in a democracy the three-pillar structure—legislature, executive and judiciary—is in unstable equilibrium, the author advocates the fourth pillar, namely, the people, to ensure a stable equilibrium in the system. And, in a situation, when people see the glaring gaps in the precept and the practice, how could there be progress to satisfy them, points out theauthor.

B. SIVARAMAN, I. C. S. (Retd.)

HOW can the country progress ? Faced with the enormous difficulties in stimulating growth, people ask the question and many shrug their shoulders and say 'it is a doomed country'. The sentence of doom has been passed in many forums ever since we attained freedom. By all accounts we should have starved in millions by now. Many forecast for us the role of a Banana Republic in economic affairs. We seem to have survived all these prognostications. As the largest developing country in the world, we seem to have side stepped many of the ills plaguing the developing countries. Yet looking at the disparities between the wealth of the developed world and ours, such of us as have had a taste of the same wishfully ask 'Can we ever reach the heights of worldly wealth that they enjoy ?'

At the same time such as have a conscience and see the level of the poverty in basic human needs in the country and the millions suffering from want, wonder when if at all these damned of the earth are going to get a minimum satisfaction. Many of us equate progress with the worldly wealth of the West. The general urge of the elite of the developing countries has led to the few rich and the vast poor, an imbalance which will ultimately crush any country. We have seen this danger and tried to avoid it but not quite successfully. When we talk of the country's programme and the country's aim, we have to be sure in our minds as to what we mean by progress and whose and how far.

A conscious policy

Man was exploiting natural resources and flying to the moon and the stars before the dust bowls in many parts of the world and the dead streams and the pollution and the energy crisis, made him pause in the mad rush to disaster. Having thought in the many forums of the world and having passed sanctimonious resolutions, the powerful of the world have decided to stabilise their lion's share of the resources of the world. The iron fist below the silken glove is all too apparent. India came into freedom and the freedom to plan its own path, long after the fruits of the industrial revolution had been shared by the powerful of the world. On the other hand, the population explosion from the fifties of this century due to better health of the people, leads to a rising demand for all types of satisfaction. The country has therefore to be very clear in its objectives as to what path of progress it has to take, keeping in view the present world economic environment, the resources it can muster, how much egality can be achieved and must be achieved and how much productivity and production can be generated. The theory that production by itself will lead to the satisfaction of the many no more holds good. It has never worked that way. A conscious policy and a frame of action is necessary to see that there is growth with social justice.

Natural resources are limited even if new sources are found by careful search with the help of newer and newer technologies. For this country, capital is limited, whether land, water or monetary capacity. The greatest renewable source the country has got is its vast store of human intelligence and skills. Progress has therefore to be sought through mobilisation of this. This postulates a departure from the philosophy of the West in putting its faith in more and more mechanisation and Robot technology along with acceptance of unemployment and alleviating it with carry home schemes. Serious thinking on our path has not yet started. Indian thought cut away from western predilictions, has to come to the fore. Our academicians who should lead in this field are still overwhelmed by their western culture and have yet to get their freedom of thought to look from our angle at the basic problem facing us and seek our own remedies. This hurdle has yet to be got over.

The way we muddle along

The way we muddle along with our approach to the lines of progress can itself make a full scale debate. Leaving it for future discussion in this forum, any translation of a final objective into fulfilment requires a structure of action. In a Democracy which we claim we are, the fixation of a direction, making it legally possible, executing it and protecting the citizen from any arbitrariness, rests on the three pillars of the state, viz., the legislature, the executive and the judiciary. Each of these pillars exercise an autonomy and at the same time is controlled by the other two in certain ways. The web of this structure varies from democracy to democracy according to the accepted Constitution of each State. A three pillar structure is in unstable equilibrium. There has to be a fourth pillar for stable equilibrium. This pillar exists and is 'The People' from whom springs all authority for action.

Directive Principles of State Policy

At the dawn of freedom, leaders of public thought in the country, hammered out in the name of the people, the Constitution of the country which is to be the frame for all democratic action. The form of the Constitution and the contents of the same, has guided and controlled the three pillars of the State since the Constituent Assembly passed the Constitution and it was duly signed. Whilst there has been occasional criticism and occasional opposition by groups here and there, the general form of the important aspects has rarely been questioned. When conflicts arose, by due amendment of the Constitution allowed by the Constitution itself, Parliament and the Legislatures brought the Constitution in a line with the general acceptance.

Amendments have rarely been single party issues. Thus we may take the Constitution as it stands as the 'Will of the People'. What guidance has this given to us to the lines of progress we have to undertake ? The following extract from my article 'Policy Formulation in Government'* is relevant to our discussion. 'Directive Principles of the Constitution'—The widest attempt to establish national policy objecctices is enshrined in Articles 36 to 51 of the Constitution embodies in Part IV under the heading 'Directive Principles of State Policy'. It is significant to note that none of the forty-four amendments of the Constitution has sought to amend any of these Aricles under Part IV.

One may, therefore, be inclined to think that the founding fathers have been able to state national policy so clearly that over time nobody has found any reason to change the policies. Another view may be that these statements of policies have not been implemented in such a way as to raise issues of conflict to need a rethinking about policies. Principles are supposed to lead to policy approaches. A policy should lead to an implementation structure which can ensure that the policy is really implemented. Ultimately, it is the implementation which leads to conflicts and provides the need for amendment of the basic principles or policy and hence Constitutional amendment. Though it is true that the Directive Principles have not been changed over time, the amendments of the effective parts of the Constitution and particularly the Fundamental Rights arise out of the conflict in implementation of some of the Directive Principles, viz., that of Egalitarianism. At the same time, will it be true to say that none of the principles need any change ? The Directive Principles relate not only to fundamental rights but to various aspects of national life. Conflict can arise only when the provisions are implemented. Article 37 lays down that the provision shall not be enforceable by any Court..... It shall be the duty of the State to apply these principles in making the laws. In the distribution of functions among the three pillars of the Constitution,—the Legislative, the judiciary and the executive, the judiciary has been given the right to demand compliance. Various writs have been provided in the competence of courts to enable them to do so. Article 37 prohibits the judiciary from enforcing any part of this Chapter. What if the State does not observe these principles in making the laws ? Obviously there is nothing to force the State to take action.

Great expectations

Article 39 lays down certain very broad principles of egalitarianism. Clause (a) says that the citizens... have the right to adequate means of livelihood. As everybody knows, what is adequate can be argued: anyhow so far no ploicy which can be administered has been found to get this implemented in the present mixed economy. Similarly it says that there should be equal pay for equal work for both men and women. Yet in practice we see that it is not so. In clause (c) it is said that the operation of the economic system should not result in the concentration of wealth and means of production to the common detriment. The mixed economy may not ever be able to reach this objective. Thus we are faced with the obvious contradiction between what are called national principles and what is achievable in the framework which we have established for ourselves. This inherent contradiction has been brought to the fore in many dialogues in the country on its governance.

Article 40 emphasises the need to organise village panchayats. The nation has found in experience, that without a heirarchy of selfgoverning institutions, properly linked with administrative and financial decentralisation panchayats by themselves produce nothing. They cannot function as units of self government without suitable linkage to the State Government through this heirarchy. Yet such a structure has not been found politically acceptable so far.

Article 43 calls upon the State to provide a living wage and also to promote cottage industries. What is a living wage differs from economy to economy. How cottage industries come within the framework of a living wage is not clear.

Article 44 seeks a uniform safeguard throughout the territory of India.....The Constitution itself in Schedule V and Schedule VI has found the need to provide modified laws in certain areas of the country. Article 45 imposes a time limit for compulsory education. We all know that there is a gap between the objectives of an institution and the service that the institution actually renders. In primary and lower secondary education this country we are faced with this gap.

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*Management in Government, Vol. XIII, No. 1 (Apr. June) 1981 Ministry of Home Affairs.

A principle has no meaning unless it can be worked. Administration is the art of the possible. If at a point of time a certain approach is not implementable, a national policy directing its implementation only leads to frustration. Thus, we see inherent contradictions in the Directive Principles which makes it difficult for implementation of these principles."

Fundamental duties

In the Forty-Second amendment of the Constitution Parliament has added a new approach. Article 51 A expects certain duties from every citizen. A society cannot survive without every citizen realising and complying with his duties to society. Too much emphasis on the rights of the citizen may have created the impression that our society is a free for all. Whereas this statement in the Constitution now is a timely one, there is no method to enforce the directive. The wish stands in the air, just as the Directive Principles stood till the amendment of Article 31(c) by the Forty-Second amendment, "giving the principles teeth." The Representatives of the people who have the authority to give a national direction to the three pillars of the State, must clear these cobwebs in policy so that the nation may move forward towards an achievable and acceptable goal.

Legislation—the glaring gaps

Between Parliament and the State Legislatures, the responsibility for legislation in the country has been divided, with a concurrent field where both can legislate but parliamentary legislation will prevail. All residuary fields of legislation which are necessary and have not been spelt out in the Schedules of division of responsibility, is the prerogative of parliament. Thus the Constitution has given the necessary legislative competence to the legislatures of the country. The Constitution also lays down that the State cannot act except through the due process of the Law. So, for progress through State action, there should normally be no complaint that the legislative cover is lacking. Yet in important fields of economic control and social justice, we do see glaring gaps. The fault is often put to the judiciary. Is it true ?

The Constitution also provides for legislation through Regulations. In the Scheduled Areas, the right to regulate the law without going to the Legislature, vests in the President and the Governors. In the big Tribal Areas of the North-East, the right has also been given in various fields to District Councils and Area Councils. This variation has been put in deliberately by the founding fathers to allow for the special problems of these two areas.

Legislation for any success in the Legislature, has to be brought by the Governments which alone has the majority to carry through the legislation. Though Private Bills system exists, rarely can a Private Bill go through. This postulates that both at the Centre and in the States, there must be Ministries responsible for all aspects of legislative competence of the Centre and the States respectively. There are many gaps in this coverage. Further there is a close knit relevance between Central and State legislation for getting through any programme of development. There has to be an agreement between both to cover such fields and take remedial action. The highly essential sector of 'Employment' was not the subject of any Ministry at the Centre till 1969. Even afterwards for some time it was held in a department which was used as a waiting room for Secretaries in transit. This gap between authority and responsibility for action has to be bridged.

Legislation in fields of Social Justice and Economic Controls often have loopholes, so as to make the enforcement unworkable. Many scholars in this come to the conclusion that all this may not be due to ignorance or inefficiency. In Land Reforms the Centre has been pointing out to the States periodically the gaps persisting in their legislation, but still many continue to remain. Similarly many studies have shown, the latest in the line being the report of the National Committee on Development of Backward Areas, that the regulatory powers of the States and the Centre have rarely been used when special problems needing their application are many. This cleavage between the declared objectives in development and assumption of the necessary and sufficient powers by legislation has to be bridged.

The group chauvinism

It is assumed that the founding fathers gave the powers in the Constitution to the legislatures, because they thought such powers should be used in the national interest by whose ever has got it. The powers to control the waters of the country in the national interest vests in the Union. Many experts have pointed out how the inter-state wranglings on division of river waters, has led to the country being unable to progress swiftly enough in agriculture. They have advised that the union should take the powers through legislation by parliament and enforce discipline. Seems to be much easier said than done. Even when through all the necessary legal channels, an agreement about the carriage of the Beas waters through the Punjab to Haryana has been contracted, Punjab has successfully 'cocked a snook' against both Haryana and the Union. This is the most glaring and the largest expression of Group chauvinism thwarting the nation. The deleterious process of chauvinistic group of people putting the nation to ransom and thwarting progress has to be fought and surmounted if we are to press on in our chosen path of progress, accepted by the nation.

Judiciary "preventing progress"

Those given the responsibility for laying down the law of the country and those given the duty of looking after the progress of the country and leading the country towards its goal, uniformly complain that it is the Judiciary with its anacharonistic interpretations of law that is preventing progress. Is this true ? The following extract from my article 'Policy formulation in Government' is relevant.

"Judiciary—its Role—Much has been said about the Judiciary's role in upsetting national policy. It is only fair to point out that in our Constitution, the judiciary is bound down by the world of the Constitution. The founding fathers do seem to have tied down the three pillars of the Constitution viz., the legislature, the judiciary and the executive, so as to prevent any of the three systems misbehaving to the detriment of the individual in the State. However in a changing world, checks and balances which may have worked at one time may become anachronisms in a different situation."

Instead of finding scapegoats, a dispassionate look at the problem is necessary. Courts can only interpret the law. Whilst no human being is free from a subjectivity in looking at the world and its problems, the judiciary is trained to eschew subjectivity. Checks and balances to ensure this can be and should be developed as times change. The law itself should be unequivocal and the facts should be properly presented to the court. Much of the litigation relevant to the progress are in the field of Economic controls and social justice. The State is invariably a party to the case. The state's legal system is to present the facts and the law. Are we satisfied that the system is reasonably efficient. Many would say 'No'. The rearguard action in the many 'Public Interest' cases in the Supreme Court gives some indication as to how the wind blows. The delivery system has to be impartial. As the system is under the control of political masters, it is they who have to ensure this. The following extract from my article 'Law and Social Justice'* is relevant.

Social justice vis-a-vis legal process

If social justice is to succeed through the legal process today, we require a suitable law, and an effective system of investigation and presentation to enable a fair judicial decision. There has then to be a purposeful excuting organisation which can give the relief ordered.....Here we come across a conflict of loyalities... In many parts of the country feudalism still persists. We are in the middle ages. Feudalism based on land rights is all pervasive in the north and middle India.. In the same region where there are either rich or poor but no large middle class, feudalism of economic power is superimposed....What matters, therefore, is the basic culture of the representatives of these people who have been given the right to legislate for the people. Adult franchise is expected to throw up a large number of the disadvantaged into the legislatures. But we have already noticed how the special representation given to the Scheduled Castes and Scheduled Tribes has not affected the position in any way....The last few years the culture of *Aya Rams* and *Gaya Rams* is raising its head and recent history has shown how pervasive it is. There is no more any surety that the promises made by a party for wooing voters at election is going to be implemented by those elected under their symbol. The party no more controls the individual member. For whom are they going to legislate, for the parasite or the host ?"

The judiciary at whom stones are thrown are only a part of the entire process of Justice starting from the legislation, going through a delivery system and after a judgement ensuring that the rights given are enforced for the least amongst the people. We have a long way to go.

The people and the executive

Just as the legislatures and the judiciary are intertwined in laying down the policies at the macro-level, the people and the executive come into play at the field and in translating the policy into meaningful lines of progress. The main difficulty in a democracy is that people in the mass through their representatives in the legislatures may agree on the broad policies for the country : but as the individual he is extremely selfish and often cannot see his good in the nation's good. It is this cleavage in the fourth pillar which makes the path of progress difficult. The individual turns to caste groups and pressure groups and the prevalence of nepotism to get the lion's share of the wealth for himself and incidentally as a necessary evil, for the members of his group or influence. All administration lies in curbing the lobbying and enforcing the national path. It is easier said than done in a country where the total wealth is very limited and expectations are many. Only in a national emergency people agree to toeing the line, but the genus SPIVS is very much noticeable. This brings up the need for a strong and capable executive organisation.

How then progress

In the futile controversy over Technocrafts and Generalists, the nation has wasted more than a decade in undermining the system. This suited the elite and the pressure groups. It did not suit the poor who have gone to the wall. By the executive, we often mean only a general law and order organisation. Modern India requires administrators in scientific, economic, legal and controlling systems and service institutions to translate policy into practice. The country has got to think of the type of organisation in the various fields and the powers to be vested in the various tiers of the systems. All agree that decentralisation of administrative and financial autonomy of various levels have to be purposefully introduced. Yet every effort has been made successfully at the top levels not to yield meaningful power, so as to interfere at the lowest levels. Jumping over the levels from the top to the bottom has led to the impossibility of fixing responsibility anywhere for disasters.

Thus fairly efficient systems and philosophy we had inherited from the British and theoretically perfect systems we evolve from time to time all collapse on this reluctance to observe rules of necessity for ensuring efficiency in administrative and service structures. No amount of pious wishes and flattery can bring a backbone to a demoralised system to make it perform. The Prime Minister in June 1980 sent a letter to all the Chief Ministers at the Centre not to go on tampering with postings at all levels except in important cases and to leave the system to organise itself for efficient work. Yet everybody notices everywhere an active game of chess in moving from pawns to queen in many a State by the political executive pressurised by the elected representatives and power lobbies and on their own so that there is no continuity or direction in any system. How then progress ?

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*T.R. Venkatarama Shastri Memorial Lecture 1980—South Indian National Association —Madras.

How far plans succeeded in the goals of good government

The framers of our Constitution had set out in the Chapter on the Directive Principles of State Policy the goals of good government. Our framers had recognised the enormous task of national development and the inevitability of delay in bringing about the necessary social changes for the various developments to follows. They did not want the chapter to be enforced through courts of law. The article examines whether and how far our plans have succeeded in realising these goals.

S. SUNDARARAJAN

IN this article it is proposed to examine whether and if so how far our Five Year Plans have succeeded in realising the goals of good Government set out by the framers of our Constitution in the Chapter on the Directive Principles of State Policy. While examining this, it is pertinent to remember that our Constitution makers had recognised the enormousness of the task of national development and the inevitability of delay in bringing about the necessary social changes for the various developments to follow and that is perhaps why they did not intend that this Chapter should be enforced through Courts of Law. Nevertheless the State has undertaken various legislative measures to further the objectives enshrined in the Directive Principles of State Policy. In fact, the Directive Principles are so wide that it can be said to embody the guidelines and objectives for our national plans. The Five Year Plans commencing from the First Plan in 1951 have sought to achieve these objectives through specific programmes which have undergone certain changes and modifications over the years in the light of experience gained during the earlier Plan period. This is particularly true of rural development which is now sought to be achieved through the Integrated Rural Development Programme, the National Rural Employment Programme and the Minimum Needs Programme covering certain essential sectors like primary education, adult education, rural health, rural water supply, rural roads, rural housing and nutrition. Our achievements may not be spectacular as we are wedded to the democratic process of development, which is bound to be time taking, but we should remember that any progress achieved through the democratic process is not only steady but also firm.

Concept of development

The concept of development through the democratic process has been recognised in all our Five Year Plans which lay great emphasis on widespread public participation in the process of planning as well as implementation and monitoring of the Plan. Where the bulk of the people live below the line of poverty, if schemes on social justice, of the right to work, of equal opportunity and of ensuring a minimum level of living are of great urgency. Economic activities have to be so organised that simultaneously the test of growth and of equitable distribution of the produce is satisfied. Only a sustained and high rate of economic growth over a long period can bring about a high level of income for the citizens, especially those in the low income group and those lacking the opportunity to work. A large number of programmes for development in the different Five Year Plans were oriented towards increasing the gross national product|gross domestic product and at the same time subserve the objective of ameliorating the economic conditions of the small and marginal farmers and the agricultural labour. The existence of poverty is totally incompatible with the vision of a just society implied in the concept of socialistic pattern of development. Programmes like community development, village and small industries, social welfare, welfare of backward classes, labour welfare, employment oriented programme, area development programmes, minimum needs programme are all aimed to remove the twin curses of poverty and social inequality.

The following plan schemes that have been|are being implemented as an integral part of the five year plans can be identified as schemes of development in furtherance of the objectives enshrined in the Directive Principles of State Policy in our Constitution:—

(1) Community Development.
(2) Agrarian Reforms.
(3) Agricultural Production.
(4) Cooperation.
(5) Development of Backward Areas.
(6) Welfare of Backward Classes.
(7) Village and Small Industries.
(8) Employment.
(9) Development of Women.

(10) Minimum Needs Programme with its components of primary education, adult education, rural health, rural water supply, rural roads, rural electrification, rural housing and nutrition.

(11) Social Welfare.

(12) Integrated Rural Development Programme.

(13) National Rural Employment Programme.

(14) Training of Rural Youth for self-employment.

(15) Drought-prone Area Programme.

(16) Desert Development Programme.

Achievements in the Plans

Let us now review the achievements under each of the above schemes over the Plan period.

(1) Community Development

Development of rural areas has been one of the abiding concerns of the successive Five Year Plans in order to bring up the level of living of the bulk of the population of the country which lives in areas, beginning with community development programmes in early 50's. This helped to establish a network of basic extension and development services in the villages thereby creating awareness in rural communities, of the potential and means of development which made quicker adoption of major technological advances later in the mid 60's in agriculture possible, and re-inforced with abolition of intermediary landlords and reform of land tenancy system. Among the most significant developments in the agrarian economy, mention must be made of the introduction of extension services throughout the country in the first two Five Year Plans as an integral part of community development movement and democratic decentralisation of rural development work. At the end of the First Plan, the community development movement covered 143 thousand villages in 1075 blocks and served 69 million persons. At the end of the Second Plan, the number of villages covered were 364 thousand in 3137 blocks and the number of persons served went up to 203 million. Over half of the country's rural population was covered. By the end of Fifth Plan, all villages were covered in 5028 blocks serving the entire rural population.

(2) Agrarian reforms

The agrarian structure of our rural economy is such that small and marginal farmers cultivate nearly 73 per cent of the operational holdings in the country although they handle only about 23 per cent of the cultivated area. Their total earnings from farming alone tend to be small and in unirrigated areas, also uncertain. During the Sixth Plan period, a three-pronged strategy to improve the economic well-being of small and marginal farmers and share croppers was introduced, i.e.

(i) improving the productivity and income from small holdings through detailed advice on land and water use based on ecology, economics, energy and employment;

(ii) farmers' own organisations for storage and marketing, particularly of perishable commodities to be promoted to protect small and marginal farmers from exploitation by middlemen;

(iii) diversification of opportunities for income through the introduction of subsidiary occupations under IRDP as well as lean season employment through MREP will be undertaken so as to enhance and stabilise rural income.

The position with regard to average size of a farm holding in all the States in India shows a trend towards a gradual reduction in the size of an operational holding. It decreased from 2.20 ha. in 1970-71 to 2.00 ha. in 1976-77 as per Agriculture Census. Land is the primary source on which agriculture is based. The pattern of ownership of this asset had to be made just and rational in order to secure growth with social justice. The objectives of the land reforms policy over the Sixth Plans have been to remove such impediments to agricultural development as arise from the agrarian structure inherited from the past and to eliminate exploitation and social injustice within the agrarian system so as to ensure equality of tenurial status and opportunities to all. The main elements of the land reforms policy have been five-fold, viz.,

(i) abolition of intermediary tenures;

(ii) tenancy reforms comprising regulation of rent, security of tenures and conferment of ownership rights on tenants;

(iii) ceiling on land holdings and distribution of surplus land;

(iv) composition of holdings; and

(v) compilation and updating of land records.

A broad assessment of the programme of land reforms adopted since independence is that the laws for the abolition of intermediary tenures have been implemented fairly efficiently whilst in the fields of tenancy reform and ceiling on holdings, legislation has fallen short of the desired objectives. Implementation of the enacted laws has been inadequate. With the abolition of intermediary interest, the ownership of land became more broad based and the erstwhile tenants acquired a higher social status. The programmes for institutional changes, concrete operational programmes, implementation machinery, people's involvement and allocation of adequate funds for financing land reforms have been included in various plans. Conferment of ownership rights on homestead tenants who belong to the poorer sections of the rural community has been one of the objectives of the land reforms policy. Security of tenure and ownership rights have been conferred on these tenants in all States.

The progress of taking over and distribution of ceiling surplus land has been tardy. Out of about 15.74 lakh ha. declared surplus in different States by March, 1980, only about 9.56 lakh ha. have been taken possession of by the States and about 6.79 lakh ha. distributed. Distribution of ceiling surplus land has benefited nearly 11.54 lakh landless persons of whom 6.13 lakh beneficiaries belong to Scheduled Castes and Scheduled Tribes. There has also been a separate plan scheme for provision of house-sites to the landless in rural areas since 1971 under which 77 lakh house-sites have so far been allotted to landless families in rural areas.

(3) Agricultural production

Increased agricultural production is the key to the reconstruction of our rural economy. Successive Five Year Plans have shown an abiding concern for development of rural areas through programmes of development in the fields of agriculture and related activities—Irrigation, Cottage & Village Industries, Soil Conservation Programme, supplies of fertilisers, improved seed and credit, animal husbandry, forests, fisheries, etc. These various aspects of agricultural development and in particular the specific Programmes for increasing agricultural production have to be seen against the wider background of the large scale transformation in rural life which has been brought about through successive Five Year Plans. By the end of Second Plan, the agricultural production (from base 1949-50=100) rose to 135. Since then, it has been showing substantial improvement over successive plan periods. Agricultural production during 1967-68 to 1978-79 has grown at an annual compound rate of 2.8 per cent. The outlays provided for the agricultural programmes ranged from Rs. 206 crores in the First Plan to Rs. 4140 crores in Fifth Plan with the result that the production of various crops has increased manifold. Production of rice, the major foodgrain crop in India increased from 20.6 million tonnes in 1950-51 to 53.8 million tonnes in 1978-79. Similarly, the production of wheat increased from 6.4 million tonnes in 1950-51 to 35.5 million tonnes in 1978-79. The total foodgrains production went up from 50.8 million tonnes in 1950-51 to 131.9 million tonnes in 1978-79. The production of five major oilseeds increased from 61.6 lakh tonnes to 93.5 lakh tonnes in 1978-79.

(4) Cooperation

Cooperation as an instrument of economic development of the disadvantaged has received considerable emphasis during successive plans. Village panchayat, village cooperative and village school were considered to be the trinity of institutions on which a self-reliant, just, and economic social order was to be built. Having begun primarily in the field of credit as a defensive mechanism against the usurious money-lenders cooperatives have through the last three decades of planning come to embrace a large gamut of activities to serve the interest of the producers and consumers. We had 105 thousand primary agricultural credit societies with a membership of 4.4 milion in 1950-51. This has increased to 116 thousand societies including LAMPS with a membership of 51.8 million by 1978-79. The number of borrowing persons was around 37 per cent of the total membership. The cooperatives cover almost all the villages. Their working capital stood at Rs. 2950 crores as on 30-6-1979. The outlays for Cooperation including Marketing and Housing have risen from Rs. 5 crores in the First Plan to Rs. 376 crores in the Fifth Plan and Rs. 914 crores in the Sixth Plan. The short and medium term loan was Rs. 229 million in 1950-51 and Rs. 8991 million by the end of Fifth Plan.

(5) Development of Backward Areas

A special programme for the development of drought-prone areas was initiated in the mid 70's. Similarly, a programme of development of desert areas was initiated in the late 70's. A programme of food for work was launched in 1977 to provide opportunities of work for the rural poor particularly in slack employment period of the year which would, at the same time, create durable community assets. With a view to removing regional disparities, particularly in less endowed areas, disadvantaged areas like the hill and tribal areas, special sub-plans of development were introduced. Special financial and fiscal concessions, credit on softer terms and subsidies were also made available to community development areas to ensure rapid industrial development. A minimum needs programmes was adopted to secure to the rural areas within a reasonable time frame certain basic amenities in the field of elementary education, adult education, rural health, rural drinking water supply, rural electrification, rural roads, house-sites to rural landless. Environmental Improvement of Slums was introduced in the Fourth Plan from the year 1972-73 onwards with the objective to provide the minimum conditions of health to the weaker sections of the urban population.

Successive Five Year Plans have drawn attention to the problem of accelerated development of backward areas with a view to reducing regional disparities and giving practical shape to the ideas of agrarianism and social justice. A significant fraction of the weaker sections of our population lives in the backward areas. Emphasis has been laid on increasing the standard of living of these persons. It has been stressed in the successive Five Year Plans that the strategy for socio-economic development should be such that the relatively disadvantaged areas and sections of the population are gradually drawn into the main stream of development. In the Third Plan, programmes for the extension of the fruits of economic progress to the less developed regions and a wide spread diffusion of industry was suggested as part of the effort to redress inequalities between different parts of the country. The Fourth Plan took a comprehensive view of the factors for backwardness and proposed that a multi-directional area development approach should be adopted in order to accelerate the development of backward areas. The policy for the Fifth Plan with regard to accelerated development of these areas was formulated broadly on the consideration of reducing the disparities. So far as programme of the economic development of backward areas was concerned, particular attention was given to drought-prone, tribal and hilly areas. Local planning was considered to be the main plank of the strategy for the accelerated development of backward areas in the Fifth Plan. Special Central Assistance of Rs. 450 crores was provided for special Area Programmes including Hill Areas, Tribal Areas and N.E.C., in addition to flow of funds from normal State Plans. Of this, an expenditure of Rs. 162.65 crores has been incurred on Hill Areas, Rs. 189.31 crores on Tribal Areas and Rs. 86.67 crores on N.E.C. Special programmes for drought-prone, desert and tribal areas were initiated in Fourth and Fifth Five Year Plan periods.

For the integrated development of hill areas of States and Union Territories of North Eastern Region, the Central Government has set up the North Eastern Council in 1971 by an Act of Parliament. This Council, started functioning from the beginning of the Fifth Five Year Plan. The Council takes up such schemes as are of common interest to more than one State or Union Territory and to the region as a whole under its development plans. Hill areas of Assam, Uttar Pradesh and West Bengal have received concerted attention of the State Governments and the Central Government. The need for providing Central assistance to the hill areas was felt from the Second Five Year Plan. It was systematised since the commencement of the Fifth Five Year Plan. Central assistance is also provided for developmental programmes in the Western ghats region falling in the States of Maharashtra, Karnataka, Tamil Nadu, Kerala and the Union Territory of Goa. The other hill areas include Nilgiris in Tamil Nadu which was given special attention for the developmental works.

The Tribal Sub-Plans envisage development efforts in the identified areas having 50 percent or more of tribal population, with resources pooled from (i) outlays from State Plans; (ii) investment from Central Ministries; (iii) special Central assistance; (iv) institutional finance. The investments made in the Fifth Plan showed that out of State share of funds, larger outlays had gone into infrastructural schemes and only 5 per cent of investment was for beneficiary oriented schemes. The infrastructural programmes might help create employment and other facilities.

(6) Welfare of Backward Classes

The recognised backward classes are Scheduled Castes, Scheduled Tribes, who are socially and educationally backward. One of the directive principles of the State Policy in the Constitution enjoins that the State will promote with special care the educational and economic interests of weaker sections of the society and in particular of the Scheduled Castes and Scheduled Tribes and shall protect them from social injustice and all forms of exploitation. This directive has been reflected in the five year plans which sought to raise the socio-economic levels of these people. The special programmes for these groups were considered as a supplement to the total developmental efforts under general sectors of development. The provision of funds for these programmes rose from Rs. 39 crores in the First Plan to Rs. 327 crores in the Fifth Plan and a total of Rs. 744 crores was spent till the end of 1978-79. Of this amount, 48 per cent was spent on educational schemes, 26 per cent on economic schemes and the rest on health, housing, drinking water supply and grant-in-aid to voluntary organisations working amongst these classes of people. In terms of physical achievement, in 1978-79, more than 59.75 lakhs children from backward classes were receiving stipends and scholarships at pre-Matric level annually and another 5 lakh students at the post-Matric level. In 1978-79, a scheme to provide Central assistance for Scheduled Castes Development Corporation set up by the State was started with a provision of Rs. 5 crores. For these Corporations, State and Centre share the equity capital in the ratio of 51 : 49. Programmes for housing and house-sites to backward classes and specially Scheduled Castes have been taken up. Efforts have been made to improve the working and living conditions of Scheduled Castes, engaged in unclean occupations hereditarily.

(7) Village and small Industries

The objecive of the proramme for the development of these industries in the preceeding plan period have been to generate large scale employment opportunities on a decentralised and dispersed basis to upgrade the existing levels of skills of artisans, to pay special attention to the growth of small industries in rural areas and small towns as well as quality of their production and to step up production both for mass consumption and export. To achieve these objectives, the planning envisaged, inter-alia, promotion and development of entrepreneurship backed by a package of consultancy services, improvement in production techniques, institutional support in respect of supply of credit and raw materials, formulation of common production programmes, various incentives for organising industrial cooperative societies, rebate on sales of handloom and khadi, etc. While the precise impact of the various policy measures and development programmes cannot be assessed for want of adequate data, particularly in respect of the traditional village and household industries, promotion of village and small industries continues to be an important element in the national development strategy, particularly because of its very favourable capital output ratio and employment intensity. The public sector investment in this sector was Rs. 48 crores in the First Plan. It was raised to Rs. 593 crores in the Fifth Plan.

(8) Employment

The importance of providing adequate and increasing employment opportunities in development programmes has been the basic objective of the planning. To the extent that any plan falls short of generating adequate employment opportunities it would necessarily give rise to a degree of social unrest which could wreck the other benefits that the plan might seek to provide. A number of measures were adopted for giving suitable employment to every citizen who has the capacity of being gainfully employed in a manner, which will not only give remuneration but also social satisfaction in the use of his talent and capabilities. With the overall aim of generating increased employment opportunities and to provide an adequate living standard for all people in the country, more detailed consideration has been given to certain sectors of skills, particularly those in which the development requires a substantial degree of social and financial investment and those in which there is a long gestation period before they could be fully acquired. An adequate and effective placement service was developed for ensuring that the available employment and the most incumbents are brought together. The placement services had an important role in providing not only suitable placement opportunities but also vocational guidance in enabling an individual to find the employment most suitable to his talent and capability.

Although various plans laid stress on increasing employment opportunities and on the adoption of labour intensive techniques to the maximum extent possible, employment generation has not kept pace with the growth of labour force. Various concepts and definitions were used to measure the labour force in view of the different yardsticks for measuring unemployment and under-employment in rural and urban areas and different magnitudes of unemployment were worked out on the basis of various sources such as Census, National Sample Survey and the employment exchange data. The Committee of Experts on Unemployment Estimates was set up in 1969. In the light of long experience of field surveys and recommendations of this Committee, the National Sample Survey Organisation has developed and standarised the concepts and definitions of labour force, employment and unemployment suitable to our socio-economic conditions and adopted them since 1972-73. (27th NSS round). The various estimates are based on three concepts, namely, Usual Status, Weekly Status and Daily Status. Labour force is estimated on the basis of Usual Status participation rates. The projections of labour force show that the labour force would grow at an annual growth rate of 2.43 per cent to 2.55 per cent during the Sixth Plan period. The labour force, in the age group of 5—59 years, in 1980, was estimated to be 268.05 million which is likely to increase to 302.29 million in 1985. The Usual Status unemployment rate was 4.23 per cent in all age-groups in 1977-78. It was the highest, being 8.20 per cent in age-group 15—29 years. The employment in the country (all industries) went up from 18801 thousand in 1967-68 to 27303 thousand in 1978-79.

(9) Development of Women

The Constitution of India not only provides for equal rights and privileges for women and men, but also for making special provision for women. Under different Five Year Plans, general as well as special programmes were taken up for the welfare of women and also to cater to their special requirements. Special emphasis was consistently placed on providing minimum health facilities integrated with family welfare and nutrition for women and children accelaration of womens education, their increase in the labour force and welfare services of women in need. Various welfare and development schemes have been introduced to improve the living conditions of women and to increase their access to material and social resources. Special steps have been taken to remove legal, social and other constraints to enable them to make use of the rights and new opportunities becoming available for them.

Despite all these development measures and the constitutional and legal guarantees, women have lagged behind men in almost all sectors. It has been estimated that in 1978-79, of the total non-enrolled children of age-group 6—14, 2|3rds were girls. In 1979-80, in age group 6—11, the population of girls in schools was 2|3rds that of boys. In the age-group 11—14, the number of girls in the schools was half that of the boys. In literacy also the number of women literates is less than half of the males (1971 Census). Despite preventive legislation, the age of marriage for girls specially in rural areas and lower strata of society has remained low. Women labour force participation rate remained generally unchanged for the last three decades, around 28 per cent. In the organised sector, the women's share increased only from 11.1 per cent in 1971 to 12.4 per cent in 1979. Women are mainly employed in the unorganised sectors which form the overwhelming majority of female workers. This is also linked with the low rate of participation in the training programmes.

There were 1891 thousand women employees in the organised sector in 1971 which has increased to 2761 thousand in 1979.

(10) Minimum Needs Programme

The concept of the MNP emerged and crystalised out of the experience of the previous plans that in the rural areas, neither growth nor social development could be sustained, much less accelerated, without being mutually supportive.

The programme is essentially an investment in human resource development. The provision of free or subsidised services through public agencies is expected to improve the consumption levels of those living below the poverty line and thereby improve the productive efficiency of both the rural and urban workers. This integration of social development programmes with economic development programmes is necessary to accelerate growth and to ensure the achievement of plan objectives.

In the absence of such a programme, the pressure for investments in the development of infrastructure and production sectors left relatively small allocations for social services. Even such outlays as were available were the first to get reduced due to any conflict of priorities created by resource constraint. Further, the benefits of social services cannot reach the poorest without conscious efforts to that end. Disparities in social consumption obtain not only between income groups but also between areas. The level of development of the various social services and infrastructure varies widely from State to State.

The Minimum Needs Programme stresses the need for social services according to nationally accepted norms within a time bound programme. The allocations are earmarked not only to ensure necessary provision of resources, but also the physical expenditure and achievement.

The programme was introduced in the Fifth Five Year Plan. Its main components are Elementary Education, Adult Education, Rural Health, Rural Water Supply, Rural Roads, Rural Electrification, housing asistance to rural landless labourers, environmental improvement of urban slums and Nutrition. During the years 1974—80, some States have made good progress while others have lagged behind.

Under Rural Electrification, the villages electrified up to 1979-80 were 2.50 lakhs out of total of 5.7 lakhs villages and pumpsets energised were 39.5 lakhs. This is good considering that in the year 1950-51, the number of villages electrified and pump sets energised were only 3061 and 21000. The enrolment of children in the age-group 6—11 years was 83.6 per cent of the total number of children in that age-group in 1979-80, while it was 42.6 per cent only in 1950-51. Similarly, this percentage increased from 12.7 in 1950-51 to 40.2 in 1979-80 in the age-group of 11—14 years. Under Rural Health, only 725 Primary Health Centres and 21 Rural Family Planning Centres were started in First Plan. These figures went up to 5462 and 50,000 during the Fifth Plan respectively.

(11) Social Welfare

Under Social Welfare sector, preventive developmental and rehabilitative services are provided to the socially and physically handicapped as well as to the vulnerable and weaker sections of the society. These services have developed gradually and the inputs increased steadily during the successive Plan periods. In the First Five Year Plan, a provision of Rs. 4.00 crores was made and the amount was placed at the disposal of the Central Social Welfare Board, set up in 1953 for encouraging voluntary organisations, especially in the field of women and child welfare. It gave grants-in-aid and technical assistance to the voluntary organisations. It also started Welfare Extension projects for providing welfare services to women and children in rural areas.

The Second Plan with an approved outlay of Rs. 19 crores witnessed the participation of Central and State Governments in addition to the activities of the Central Social Welfare Board. The scope of social welfare was widened so as to include and promote additional activities for welfare of women and children like welfare extension projects in urban and border areas, condensed courses of education for adult women and socio-economic programmes. For tackling the problem of juvenile delinquency, beggary and vagrancy and immoral traffic in girls and women, the Central Government sponsored various Social Defence schemes and the State Governments were encouraged to implement them with necessary financial support. Special programmes were introduced for the education, training and rehabilitation of the physically handicapped.

In the Third Plan, the State Governments and the voluntary organisations were associated closely in drawing up the Plan with an outlay of Rs. 31 crores. While providing services, effort was directed in particular towards sections of the community which needed special care and protection. The object was to replace individual haphazard relief and charity by organised and substained activity for education, welfare and rehabilitation wtih the general support of the community. The resources provided were utilised both for expanding the existing services and for assisting voluntary organisations to continue their activities. To this exent, development of new services tended to be limited.

The Fourth Plan aimed at the consolidation of the initiatives taken in the previous plans. An outlay of Rs. 41 crores was provided for this purpose. One of the major programmes in operation was the Family and Child Welfare Projects in rural areas. The grants-in-aid programme was utilised to a larger extent than in the past. The 'Social Defence' programmes which were being implemented by the States with financial support from the Central Government were completely transferred to the States for implementation and the Centre continued to give guidance and advice to the States.

The efforts so far were mainly directed to the provision of some basic curative or ameliorative vices. The preventive and developmental aspects which are more effective and economical in the long run did not receive adequate attention. The major thrust in the Fifth Plan with an outlay of Rs. 83 crores was on the expansion of preventive and developmental programmes. During this period, child welfare was given the highest priority. To ensure healthy growth and development of children and reduce infant and maternal mortality rates, the scheme of Integrated Child Development Services (ICDS) was launched on an experimental basis to provide a package of services consisting of supplementary nutrition, immunisation, health check-up, referral services, nutrition and health education and non-formal education to children in the age-group 0—6 and pregnant and nursing mothers in rural, urban and tribal areas. During the Sixth Plan, it is proposed to cover 1000 blocks under ICDS.

(12) Integrated Rural Development Programme

This programme which was started in 1978-79 in some blocks and has been extended to all the blocks during the Sixth Plan, aims at raising income levels of those below the poverty line by providing them with a variety of productive assets for land and water based activities and for industry, services and business. 600 families below the poverty line are to be assisted in each of the 5011 blocks every year. In all, the programme will benefit 15 million families during the Plan period. The Sixth Plan outlay for the IRDP is Rs. 1500 crores to be shared equally by Centre and State Governments, while bank credit to the extent of Rs. 3000 crores is to be mobilised.

In 1980-81, 2.80 million families were assisted and in 1981-82, about 3 million families have been assisted. The expenditure during 1980-81 was reported at Rs. 153.91 crores and in 1981-82, it is estimated to Rs. 259 crores. The institutional credit mobilised was Rs. 207.42 crores and Rs. 486.00 crores during 1980-81 and 1981-82 respectively.

(13) National Rural Employment Programme

This programme which is the adaptation of the previous Food-for-Work Programme with some modefinitions in the Sixth Plan aims at providing supplementary productive employment opportunities to rural labour for the creation of durable community assets. The total provision for the Sixth Plan period under NREP is Rs. 1620 crores. During 1980-81, 390 million mandays of employment have been generated and the expenditure incurred was Rs. 345.8 crores. During 1981-82, the employment generation has been estimated as 335 million mandays; and according to the provisional information, an amount of Rs. 166 crores and a quantity of 1.67 lakh tonnes of foodgrains have been utilised.

(14) Training of Rural Youth for Self-Employment (TRYSEM)

Main objective of the National Scheme of Training of Rural Youth for Self Employment has been the removal of unemployment among rural youth. Women and members of the Scheduled Castes and Tribes are given priority. Training is provided in related trades and|or areas of activity, which can lead to self-employment in agricultural and allied sectors, small industries and services sector. Two lakh rural youths are covered each year. In 1980-81, 1,20,596 youths were trained out of whom 45,494 were self-employed. In 1981-82, 1,29,879 were trained and 52,243 self-employed.

(15) Drought Prone Area Programme

The Drought Prone Area Programme has the following objectives :—

(a) development and management of irrigation resources;
(b) soil and water conservation and afforestation;
(c) livestock development; and
(d) deveolpment of small and marginal farmers and agricultural labourers.

The programme now covers a total of 557 blocks. A provision of Rs. 175 crores is available for this programme in the Sixth Five Year Plan. During 1980-81, total expenditure on this programme was of the order of Rs. 73.36 crores, and 46.95 million mandays of employment was generated. In 1981-82, upto December, 1981, the expenditure was Rs. 37.23 crores and 17.31 million mandays of employment was generated. The total number of beneficiaries under D.P.A.P. was 9.9 lakhs and 6.3 lakhs in 1980-81 and 1981-82 (upto December, 1981) respectively.

(16) Desert Development Programme

The desert Development Programme was launched in 1977-78, and is now in operation in 132 blocks in 21 districts of 5 States. The strategy of the programme is to arrest desertification. The following activities are taken up under this programme —

(a) afforestation;
(b) groundwater development and utilisation;
(c) construction of water harvesting structures; and
(d) rural electrification.

During 1980-81, an expenditure of Rs. 14.08 crores was incurred on the programme and 1.75 million mandays of employment was generated. In 1981-82, upto December, 1981 an expenditure of Rs. 8.57 crores was incurred and 1.67 million mandays of employment generated.

The above review clearly shows that considerable strides have been made in fulfilling the objectives edified in the Chapter on "The Directive Principles of State Policy" in our Constitution.

Cooperatives handle agricultural produce worth Rs. 1600 crores

During April-December 1982, cooperatives in the country marketed agricultural produce of the value of Rs. 1,580 crores, created an additional storage capacity of 5.54 lakh tonnes, marketed fruits and vegetables of the value of nearly Rs. 60 crores and opened additional 8,600 cooperative retail outlets to facilitate supply of fertilizers to farmers, particularly in the difficult areas.

This information was given to the Central Co-ordination Committee on Cooperation in the New Twenty Point Programme which met in New Delhi recently, under the chairmanship of Shri R. S. Kohli, Additional Secretary, Ministry of Agriculture.

Correction

In our Issue Vol. 27 No. 6 dated April 1—15, 1983, on page 25, the concluding part of the article by Prof. A. M. Khusro was inadvertantly left out by the Press. The concluding part of article is as follows :—

> "Colleges and schools of engineering and technology have increased by 1261% and medical students by 300%. No wonder that educated and technical talent , has improved phenomenally.
>
> Impressive improvements are visible in the field of health and medicine and this has had an impact in terms of a declining death rate and infant mortality rate. The number of hospital beds increased during the 25 years (1955—1980) from 125,000 to 330,000 (164%); the number of doctors went up from 65,000 to 187,000 (188%) and the number of nurses and auxiliary nurses showed an impressive rise from 32,000 to 194,000 (506%)."

Inconvenience caused to the readers is regretted.

—Editor

New Delhi Summit—A turning point for NAM

The New Delhi Message should be effectively carried to the major countries of the world at appropriate levels. The forthcoming UNCTAD-VI provides a testing ground for the ability of G-77 to project the viewpoint of NAM and other developing countries in a convincing manner so as to elicit positive response from the erstwhile stubborn North.

DR. V. R. PANCHAMUKHI

THE SEVENTH NON-ALIGNED SUMMIT recently held in New Delhi from March 7—11, has been widely acclaimed as an event of great success. Even the critics of the Non-aligned Movement (NAM)—who had in a way wished for a chaotic end of the New Delhi Summit leading to a collapse of the NAM in totality, have been struck with surprise, on finding that the NAM has emerged as a force worthy of reckoning. Even to the supporters of the NAM, the smooth and frictionless deliberations, near consensus approach of the members' on the various issues—political and economic—of the conference, excellent rapport between the host country and the dignitaries from the member countries, unqualified praise for the leadership of India from near and far quarters, have all come as happy auguries much beyond their ex-ante expectations. The Economic Declarations and also to a large extent Political Declarations have been hailed as documents of right approaches and action programmes. All this has raised further the hopes and expectations that NAM ought to achieve in the next three years under the stewardship of Smt. Indira Gandhi, Prime Minister of India.

In view of this heavy responsibility that is bestowed on India, it would be useful if the "achievements" and "glories" of the New Delhi Summit (NDS) are analysed in a cool and objective manner after the dust of the VVIPs and their entourage assembled in Delhi has settled down. The purpose of this article is to attempt such an analysis for the economic issues dealt with in the N.D.S In this context, one should ask the following types of questions: firstly, having met in an environment of unprecedented crisis, has the New Delhi Summit (NDS) responded to the challenges by giving to NAM a new sense of direction and commitment ? Secondly, has the NDS avoided the usual temptation often found in such huge conferences of passing general resolutions but instead has it identified concrete action programme ? Thirdly, what are the responsibilities of the members of the NAM, both individually and collectively and those of India in particular, in undertaking follow up actions ? Fourthly, what are the areas or themes, in which NAM has left some gaps ? In the following pages, we discuss these interrelated issues though not necessarily in that order.

A New Turning point

NAM has lived through a variety of crisis situations in the past and in fact, ironically enough, it is the environment of crisis from time to time that has been responsible for its survival over the past 21 years. Even the origin of NAM can be traced to an environment of critical concern for anticolonialism, preservation of independence and sovereignty of states, dangers of military dominance of one or the other superpowers. The anticolonialism movement begun with the Bandung conference of 1955, led to the formation of NAM as a positive institution for fostering the common interests of the newly independent states of the world community. Though confined initially, to the political aspects of international relations,—in particular, threats of war, re-emergence of colonialism etc—soon the realisation of the imperatives of the economic development and its linkages with the strength of the newly independent states for preserving the spirit of non-alignment, necessitated the addition of economic dimensions to the scope of the NAM. It was in the Cairo conference of NAM in 1964, "A programme of Peace and Economic Cooperation" was declared—introducing an interesting fusion of the twin concepts of political and military non-alignment with the superpowers, but universal economic cooperation with all the countries including the superpowers. The third summit held in Lusaka in 1970, further reiterated the importance of action programmes for economic development. But it was in the fourth Summit, held in Algiers in 1973, that the NAM began the convention of having three types of declarations—political declaration, economic declaration and declaration on programme of action for economic cooperation. Gradually, the awareness of economic dependence of the members of the NAM on the power blocs, despite achievement of political and military independence from them, led to the creation of the concept of economic interdependence and to assertions for securing ecnomic rights and privileges. In this context, NAM could claim some credit for a number of innovative schemes and ideas initiated in the world community. Creation of UNCTAD as a forum for deliberating on the issues of trade and development of the developing countries (1964), institution of the Generalised System of Preferences (1969), resolutions of transfer of resources to developing countries and the resolution on New International Economic Order and Programme of Action in the UN General Assembly (1974), Conceptualisation of the problem of commodities (1976 UNCTAD-IV), resolution on North-South negotiations at UN (1979), could be traced directly or indirectly to the deliberations of the NAM. In the background of such creditable record for NAM, the assessment of NDS, assumes special significance. Has the NDS lived up to this glorious record of NAM ?

Environment of Crisis

NDS met in an environment of unprecedented crisis. Apart from the crisis of continued economic recession—threatening to assume the proportion of depression—the world community is passing through an unprecedented climate of mistrust, misdirection and lack of understanding and appreciation of each other. This subtle feature of corrosion of values of cooperation in the world community is amply brought out in the eloquent inaugural speech of Smt. Indira Gandhi, Prime Minister of India. "In spite of Ottawa, Cancun and Versailles the dialogue between the developed and developing has not even begun. Only a few in the North realise that the sustained social and economic development of the South is in its own interest. Thus, we ask not for charity or philanthropy but sound economic sense". Even the international institutions have contributed to the process of misdirections. As the inaugural speech puts it—"The time has come to assess to what extent pressures are building up, how International Institutions are being used to make us change our policies in directions which are not only against our own judgment and interest but may even defeat the purposes, which these vary Institutes have in mind". In the context of this heterogeneity of economic perspectives and perceptions, the NAM had to redefine its own goals and strategies. The inaugural speech attributes this environment of misdirection to the economic weakness of and diffeences and discord among the members of the NAM, and defines Non-alignment as a process of establishing "equality among nations and the democratisation of international relations, economic and political." and global cooperation for development on the basis of mutual benefits and preservation of national independence and freedom. It is this perception of the philosophy of non-alignment that has given a new turning point to NAM. If Havana Summit could be identified with the call for Global Negotiations, the New Delhi Summit could be credited with the result of spelling out of strategies for effectively fostering economic cooperation among the members of the NAM and other developing countries.

Action Programme for Economic Cooperation

Even though these perceptions of the NAM emphasised at the NDS are not new ones, their underscoring at the present juncture of world crisis, assumes special significance. However, one should hasten to add that the ability of NDS to provide a much cherished new turning point, depends upon the nature of the initiatives and leadership which India would provide in the coming months in (a) giving concrete shape to the New Delhi Declarations and (b) vigorous pursuits for implementing the various specific action programmes identified in it. A critical review of the Declaration of Action Programmes of Economic Cooperation is worthwhile in this context. Table No. 1 summarises the decisions that are incorporated in the 115—paragraph Action Program, by seven categories of decisions. There are 4 decisions calling for Ministerial Meetings, 8 decisions calling for Meetings at officers' levels, 21 decisions urging Expert level meetings. Six decisions propose establishment of new Institutional facilities or Centres, such as Information Centre on Transnational Corporations in Havana, Research and Information System in New Delhi, Centre for Cooperation in the sphere of postal services and tele-communications. There are as many as 32 items on the Action Programme, which give out appeal to the member countries for cooperation, endorsement etc. and 31 items which are of general endorsatory type, reiterating some of the decisions or actions initiated in other forums or earlier meets. In about 12 paragraphs the Declaration expresses appreciation or satisfaction over the decisions or actions taken by the member countries. For example, the Summit appreciated the offer of the Philippines to provide the permanent headquarters for the Common Fund. This simple analysis seems to suggest that bulk of the Declaration on Action Programme, consists of general and broad endorsements which do not add much to the action-oriented programmes of the decisions. However, one should not undervalue the importance of these appealing/endorsing types of decisions since they are aimed at fostering the spirit of group solidarity and joint commitment to the cause of NAM by its members.

The Action Programme for Economic Cooperation deals with 23 diverse aspects of economic and social activity: viz. (1) Raw Materials (2) Trade, Transport and Industry (3) Monetary and Financial Cooperation (4) Insurance (5) Scientific and Technical Development (6) Technical Cooperation and Technical Services (7) Food and Agriculture (8) Fisheries (9) Health (10) Employment and Human Resource Development (11) Tourism (12) Transnational Corporations (13) Sports (14) Research and Information System (15) Role of Women in Development (16) Peaceful uses of Nuclear Energy (17) Tele-communications (18) Public Enterprises (19) Solidarity Fund of the Non-Aligned countries for Economic and Social Development (20) International Cooperation for Development (21) Housing (22) Education and Culture and (23) Standardisation, Measurement and Quality Control. This list of topics/themes of cooperation is obviously quite comprehensive. However, it is regrettable that the Action

Programme does not have focus and concreteness in the sense that most of the decisions in it warrant significant amount of further work|study for identifying operational steps for implementation. Consider, for example, the decisions on Food and Agriculture and Food security. "It is decided that the non-aligned countries should continue consultations and examination of the proposals concerning food security issues and the details of the different schemes.......with the objective of establishing a Food Security System of Non-Aligned and other Developing countries". This being the tenor of a number of other decisions, the burden of success of the Action Programme is thrown essentially on an effective follow up programme. In fact, a detailed plan of follow up action is urgently called for. Further in view of the diversity of the issues, it should be useful to prioritise them with a clear focus on purpose and direction. The Action Programme itself should have set up priorities for follow up action.

Final document

The final document on Action Programme, slurs on a number of specific proposals which were highlighted during the deliberations of the conference. The proposal for establishing a Bank for developing countries is glided over by a simple reference to the feasibility study being undertaken by G-77. If the cooperation of oilrich countries had been assured, the NDS should have taken a concrete step forward by announcing the establishment of such a Bank. On the Centre for Science and Technology for Non-aligned and other countries, the decision refers to the process of finalising the statute for such a Centre and expresses appreciation of the efforts made by the Government of India in the establishment of such a Centre. With a little more concerted pre-summit efforts, the statutes could have been finalised for the NDS to announce the final launching of such a Centre. For those who had expected some radical concrete steps for launching of economic cooperation, the Declaration of NDS makes rather a disappointing story.

Throughout the text of the Action Programme, one cannot fail to observe that there is an acute concern for coordinating the functions, strategies and action programmes of the NAM with those of the G-77 and the Caracass Programme. Even though the NAM covering 101 countries and representing more than 80 per cent of the Third World population, is a major component of G-77, the institutional coordination between G-77 and NAM obviously still becomes necessary. The text of the Action Programme often refers to the Non-Aligned and other developing countries", to the Caracass Programme for development and the initiatives taken by G-77. It is necesssary that the mechanism for continued coordination between G-77 and NAM is worked out in the near future. In this context, the proposal for a separate Third World Secretariat should have received more effective endorsement at the NDS. It would have been useful if the various centres—such as Centre for Technology, Research and Information System, Centre for Cooperation in Communications, could have been fostered under a common umbrella of a Secretariat for South-South Cooperation.

Economic cooperation among the countries of the South depends significantly on the avenues of complementarities among them. It is often regretted that the South suffers from situations of poor complementarities since most of the countries are on similar paths of development with competitive postures for production and trade. However, such dismal judgements on lack of complementarities and hence poor scope for cooperation within the South, have been based on partial perceptions of the potentials of complementarities. A comprehensive multi-dimensional view covering capital, investment, human skills, infrastructure, such as transport, banking etc., would identify the variety of scope for complementarities in production, trade and services. The recent economic activities in the Middle East, with capital of oil surplus countries, human resources of neighbouring developing countries and project-designs and materials from some of the developing countries, is a clear case of complementarity within the South — though achieved by accident and not by design. The Action Programme does not make any specific reference to the problem of complementarity or does not make any effort at suggesting ways and means of planning for better complementarities. The concept of collective self-reliance has also been left as vague and general as ever, even though NAM and G-77 should have given greater consideration to the task of working out its operational contents. It would have been useful if the Declaration had emphasised the need for plan coordination among the members of NAM and other developing countries at least on a reional basis. A multisectoral plan-harmonisation would be a step in the right direction. The Research and Information System would have to address itself to this task on an urgent basis.

Economic Declaration and Immediate Measures

In addition to the Political Declaration and Action Programme for Economic Cooperation, the NDS has also issued a Comprehensive Economic Declaration with a Programme of Immediate Measures in Areas of Critical Importance to Developing Countries, being part of it. Despite variety of efforts for discrediting the NIEO movement, thwarting the UNCTAD initiatives for tackling the commodities problem, damaging the process of launching of Global Negotiations etc., by a few vested interests of the North, the NDS has not sweved from the act of faith and commitment of the NAM to the objective of establishing a New International Economic Order. Observers of NAM have noted that there were some attempts by a group of economists and policy makers predominantly from the North to appeal for stalling of Global Negotiations on the ground that the oil power which had induced the urge for Global Negotiations and cooperative efforts was now on the wane. However, there were also equally strong appeals from a group of academicians and policy makers in India that the efforts for NIEO and Global Negotiations should not be suspended and that the injustice and distortions of the world economic order, which predate the oil power, need to be corrected by concerted joint efforts of the North and the South. It should be stated to the credit of the NAM that it has now grown into maturity and mustered enough conviction and courage not to be swayed by the misguiding advice and perceptions which are detrimental to its own interests. The Economic Declaration categorically states that "The responsibility for the failure to launch the Global Negotiations is due to the refusal of a few industrialised countries, in particular one major industrial country, to respond positively to the constructive suggestions made by the Group of 77 in July 1982". It then goes on to reiterate their NAM commitment to the early launching of Global Negotiations and their faith in the linkages of Global Negotiations with the realisation of goals and objectives of the International Development Strategy for the Third United Nations Development Decade." There is also a concrete suggestion that a conference should be held "within the United Nations to launch Global Negotiations in early 1984, by taking up in the first phase those issues on the formulation and allocation of which agreement would have been reached" and the "during this first phase, parallel efforts should be made through a working group of the conference for expanding the Global Negotiations to include in the second phase other issues, particularly those affecting the structure of the international economic system and institutions." It is worth noting that this two-phased approach is to be carried out within the frame work of the United Nations and not in the forums of the specialised agencies, obviously because the latter are weighted in favour of the North.

The Programme of Immediate Measures in Areas of Critical Importance to Developing Countries, makes somewhat familiar reading in so far as it deals with the target of 0.7 per cent of GNP as ODA by 1985, restructuring of debt burden, increase of IMF quotas, expansion of lending programme of IBRD, Market access and price stabilisation issues, facilities for indigenous energy development, enlargement of Food Financing Facility of IMF etc. Unequivocal endorsement of the various UNCTAD schemes and programmes is a positive feature of coordination of approaches between NAM and UNCTAD. The irony of the so-called Immediate Measures is, however, that they are being proclaimed as immediate for the last several years in different UN forums, the Brandt Commission Report etc. but they are suffering from serious setback in implementation. In any case, past experience in international negotiations proves that perseverance is key to eventual success, and NAM should also prove its faith in this principle.

There is a peculiar paradox in the declaration on Immediate Measures. Of the 39 elements in this scheme, 12 measures such as attainment of 0.7 per cent of GNP as ODA, better market access for developing countries, adjustment in the developed world etc., fall strictly in the purview of the developed Countries alone; 10 measures such as commodity agreements under the IPC of UNCTAD, contributions to Common Fund, International Emergency Food Reserve etc. fall in the joint purview of the developed and the developing countries. 16 measures such as increase in IMF quotas, immediate review of IMF condtitionalities, expansion of lending programme of IBRD etc., are addressed to the international financial institutions. Only one measure—which is also rather innocuous in character—viz. exchange of information between the developing countries on their negotiations with regard to their external debt and where desirable, collaboration between them in such negotiations, etc., seems to fall strictly within the purview of only the developing countries. This clearly brings out that the implementation of the Immediate Measures goes beyond the members of the NAM and as such dialogue with entities outside NAM becomes an essential input in the early implementation of these measures. It is unfortunate that the so-called Immediate Measures do not include many more measures which could have been under the direct jurisdiction of the Third World countries. The measure of exchange of information on debt also seems to fall far short of the original stronger version of cooperation in the form of formation of Consortium of Debtors and the idea of using the common strategy of this Consortium as a bargaining lever in the North-South Negotiations.

One of the Immediate Measures, which stands a fairly good chance of successful implementation at any early date is that of holding of an International Conference on Money and Finance for Development. This measure comes to close to the suggestion made by the U.S. Secretary of State, in the middle of last year (1982) on holding such a conference. However, there are likely to be serious differences in perceptions in regard to content and urgency of such a conference. At the time when the U.S. moved this idea, the debt crisis of the Latin American Countries was threatening to push the leading Banks of the USA to the verge of bankruptcy, the attitudes of IMF on conditionalities and the lending policies of IBRD were not clear. Now that the debt crisis has been guided over partially, the hardened attitudes of the IMF and World Bank have become clearer, the US could afford to take the need for such a conference on the scale of reduced urgency. Further, according to the perception of G-77 and NAM, the contents of this conference would include the questions of resources for development in the developing countries, "comprehensive reform of the existing inequitable and outdated international monetary and financial system", and "the need for growth-oriented structural adjustments". However, the North may feel that the debt issue should receive priority consideration, while the issues of exchange rate, rereserve currency, resource transfer etc., could be given secondary importance. It is gratifying to note that the NAM perceives the convening of such a conference, not as a precondition for launching of global negotiations but "as an integral part of these negotiations when they are launched". The latter element has the built in perception that NAM stands for an integrated approach to the interlinked issues of trade, finance, restructuring resource transfer, institutional changes rather than dealing with them separately.

What Next ?

The crucial question that members of NAM and India in particular, as the leader in the next 3 years, have to ask is: what follow up actions are necessary ? NDS has only provided a forum for reiterating the common commitment and strategy of NAM on various issues of current relevance. As stated earlier, NDS can be hailed as a success not for having taken any radical decisions but for proclaiming a new sense of direction and commitment to the spirit of NAM in the new environment of the world economy. Hence, the responsibility of the follow up action becomes much greater in this context. One of the immediate followup actions should be one of establishing a separate technocratic forum under the provisions of the Research and Information System stipulated under the Action Programme for Economic Cooperation. Such a forum should eventually take the form of an Institute for Developing Economies managed by the experts and technocrats of the developing economies. It should be a mini-secretariat for the NAM and G-77 activities. As stated earlier, a number of decisions of NDS, require elaborate backing in the form of operational steps and work-programme related to them and such techno-political exercises could be carried out only if the experts with a fervour for the interests of the Third World devote themselves to these tasks under the umbrella of the Research and Information System. The NDS has not fully realised the dangers of participating in any North-South Negotiations and the specific International Conference on Money and Finance for Development, without adequate preparations on the policy options and their implications. The follow up measures of NDS should devote immediate attention to the tasks of undertaking such elaborate exercises. The New Delhi Message should be effectively carried to the major countries of the World at appropriate levels and as suggested by Algeria and Sri Lanka, the chairperson of NAM should constitute a small steering committee of heads of state to carry on this task of message spreading on a continuing basis. The forthcoming UNCTAD-VI (Belgrade in June, 1983) provides a testing ground for the ability of G-77 to project the viewpoint of NAM and other developing countries in a convincing manner so as to elicit positive response from the erstwhile stubborn North. This provides a test for the efficacy of the follow up actions initiated between now and June 1983. As a matter of strategy, the follow up actions should be swift on the Action Programme for Economic cooperation among the countries of NAM, and other developing countries. Some swift measures on South-South cooperation could act as an eye-opener for more effective North-South dialogue. It is imperative that the plan for followup of NDS is based on some concepts of prioritising the various elements of the New Delhi Declarations. It is hoped that under the dynamic leadership of the Prime Minister of India, the NAM would experience a new Turning Point for the ultimate benefit and welfare of the humanity of the world at large and in particular that of the developing world. □

TABLE NO. 1

Action Programme for Economic cooperation—by types of Decisions

Type of Decision	No. of Decisions included in the Action Programme
1. Decisions to hold Ministerial Level Meets	4
2. Decisions to hold Officers' level meeting	8
3. Decisions to hold Conferences of Experts	21
4. Decisions to establish new Institutions/Centres Infrastructural Facilities	6
5. Decisions of Expressing satisfaction/Appreciation of earlier decisions/actions	12
6. Decisions of the types of appeals to Member Countries/UN Bodies	33
7. General Endorsating type	31
Total	115

Air Conditioning Unit Recovers Heat during Winter Months

AN air conditioning unit which can be used for cooling purposes during the summer and for generating heat in the winter has been developed in Sweden by AB Carl Munters, Sollentuna, manufacturers of heat recovery systems and ventilation equipment, among other products. The unit, said to be energy-saving and operate at comparatively low costs, will make air conditioning economically acceptable in countries such as Sweden—where summers are short—since it can be used year-round.

When recovering heat, the unit works as an ordinary heat exchanger, supply and exhaust air passing through it in different channels. The heat exchange takes place via a thin plate. In the winter, supply air is thus heated by used exhaust air, the high efficiency of the exchanger considerably reducing the heating requirement.

If used for cooling purposes, on the other hand, a 200-watt pump—the system's only moveable part—is started and water distributed over the heat exchanger, streaming over its exhaust air surfaces as a thin film. The exhaust air vapourizes a portion of the water and in this way the surfaces of the exchanger are cooled and, in turn, cool the warm supply air. This takes place without any change in the humidity of the supply air. Cooling occurs without external energy consumption.

The exchanger/cooler cell consists of corrugated foils specially treated so that an ideal water distribution is possible on the exhaust air side.

The cooling temperature which can be achieved depend on outdoor climatic conditions, among other factors. Theoretically, air can be cooled down to dew point, but in practice the temperature is a little higher.

(News Letter from Sweden)

Harnessing biotechnology for the benefit of industry

"Ferment or perish". Biotechnology has been a boon to the industry in the advanced countries. In India still it is in the embryo stage and wrought with many problems which should be solved before any spectacular studies could be made. The Regional Research Laboratory, Jammu has done an important work in the field of industrial biotechnology. The setting up of the Biotechnology Board augurs well and indicates that Government is conscious of the importance of the technology.

SURAJ SARAF

BIOTECHNOLOGY has an important place in industry. "Ferment or perish" has been the slogan which is gaining popularity. After physics and chemistry, biotechnology is heralding the third revolution in the field of industrial processes.

Nature is always cleverer than man. Nature can synthesise chemicals too complex for today's man-made technology. What the scientists are determined to do is to harness that cleverness for the benefit of the industry.

Biological process of fermentation has been employed traditionally in the making of *dehi,* cheese, wine, bread and even in the manufacture of certain medicines but its conscious and scientific application started only in last century and it really gained the status of a microbiological industry with the coming into being of antibiotics after the end of the Second World War. Very recently evolved wonder process of genetic engineering has helped to broaden the application of biotechnology unfolding the real potential of this branch of scientific know-how.

Board

A decision to apply science to industry had been announced by the Prime Minister at the last Annual Session of the Indian Science Congress at Mysore. A top level Biotechnological Board having top-notchers of the Indian scientific hierarchy represented on it was set up.

Prior to this some good work had already been done in this country in different centres. An effort to monitor the overall work done in the country and to chalk out future line of action, had been made about five years ago in a symposium involving about 125 scientists and industrialists, held at Jammu and sponsored by the Regional Research Laboratory, Jammu.

The Board will identify some thrust areas of relevance to agriculture, medicine and industry. Its major aim was to ensure that a critical mass of effort is generated in order to accomplish specific tasks in these areas. The aim of the Board was to generate the required momentum for progress. The Board will also assist research workers in universities and national labs in their work by supplying requisite chemicals and equipment. It will also try to take advantage of the expertise available with Indian scientists working in this field abroad, particularly in North America. In short, the Board will avoid duplication, maximise benefits from the existing and available infrastructure and personnel and mount new initiatives.

Foreign exchange saved

As mentioned above some important work in the field of industrial biotechnology had already been accomplished in the Regional Research Laboratory, Jammu. The most important fermentation processes evolved by this lab is for the manufacture of citric acid, a very important chemical agent. The significance of this know-how will be apparent from the fact that hitherto it was the closely guarded secret of a few world multinationals who had spent crores of rupees and, fifteen to twenty years in tackling the microbes to yield citric acid. In the scientific world it is still regarded as an extremely tricky process.

India had totally depended on imports for citric acid which amounted to nearly a Rs. 1.5 crores annually. The process has already been taken up by a big firm in Andhra Pradesh for manufacture of citric acid.

Another major achievement of this lab in biotechnology is the development of know-how for the manufacture of giberellic acid, a very potent plant growth hormone, which is totally imported to the tune of over a crore of rupees per annum and has great potential for expansion in agriculture and horticulture. It is used in early malting of barley in breweries, early germination of seeds, early sprouting of tubers, elongation of stems and for proper shape, size and colour of fruits as grapes, apples, peaches, pears and strawberries. Spraying grape crop with giberellic acid can increase the yield by 50 per cent.

Another important product of this lab is calcium gluconate used in pharmaceutical industry as chewable tablets and injectible for fortification and nutritional supplement for foods.

Some other national labs are also working on application of this technology in winning minerals, and metals from ores, especially thin ores. Laboratory scale success is claimed in leaching of copper but it has not been applied in the field as yet though in some other countries the technology is already being used in case of several metals including copper. In India ideas have also been aired for utilising biotechnology in prospecting for oil, preventing fires in mines *et al.* All these are, however, yet only in theory. The Biotechnology Board may help to convert these useful ideas into reality.

Problems

But any spectacular progress can be achieved in this field only if some of the problems are tackled expeditiously.

Most urgent and important of these problems is the setting up of an Indian Type Culture Collection of microbes to meet the requirements of teaching, research and industry. This aspect of the problems assumed great importance because of several difficulties in importing microbial culture from abroad. For instance in the field of antibiotics, we had started almost simultaneously with many other countries but we are still lagging behind considerably in respect of yield of strains and efficiency of technology.

Since the productive potentiality of microbes plays a significant role, increase in the yield by altering genetic potentiality of a cell is a well-known technique. The results of experiments with several microbes in the area of mutations, microbial genetics and genetic control, have given wealth of information for utilisation and application to industrial strains. Moreover, the productivity of any product through biotechnology also depends on the environment within and without the microbial cell.

Keeping in view both these factors, it is clear that improvement of microbe strains is a very important step for further development in this technology.

According to a world authority of biotechnology Dr. C. T. Calam of U.K., in order to get results in the development and improvement of micro-organisms by mutations, selection and other methods, it is essential to use well-planned work programmes which required a good deal of organisation. He, however, stresses that mutation and selection to improve the productivity of culture has now been well established for about thirty years and is still recognised as a valuable tool for the purpose.

On genetical improvement of strains, Dr. Calam had observed that while genetists considered that deliberate transfer of specific genes from one strain to another is possible and that these techniques can be used industrially, practical workers feel that successful application of these methods was still some way off and that there was still much to learn before they could be brought into use. He has stressed that considered from all angles this area should not be neglected as it was certain to be put to use as years went by.

A fine example of employment of higher yielding strains and refinements and rationalisation of constituents, to obtain higher yields has been in the case of penicillin. This can be achieved in other cases, too. What is needed is that greater efforts are put in research by augmenting research facilities including adequate man-power and sophisticated instruments.

Fermentation industry in India is lagging behind in the use of process control instruments. As also pointed out above the improvement of environment in fermenter is very essential for achieving high yield. In several countries, the right type of environment had been achieved by using automatic process control instruments and parameters were controlled by computerised programming. It may not be possible to achieve this immediately in India, but compared to manual control being exercised in most of the fermentation plants in India, at least first stage in p[illegible] automatic process control instruments could be [illegible] to improve the environment.

Delving into the important role of biochemical engineering in biotechnology, an expert points out that it had been the attempt of biochemical engineers to optimise the input energy to effect the productivity by use of fermenters of various designs. Therefore, various types of fermenters are in use like the tower fermenters, air-lift fermenters, fermenters with high air dispersing system *et al.* The use of on-line computers to record the parameters, store the information and use them to signal or activate the rectifying system, is also on increase. Yet another future development and widespread use would be direct monitoring of the product, intermediaries and nutrients in the fermenter broth by the use of biochemical electrodes.

In short, biotechnology has to be made well-controlled, and manoeuvrable to use the microbes to the optimum.

Many applications

Development and progress in biotechnology will assume more and more significance in the areas of food supply, environmental protection, medicine energy and raw material supply. In the long run biotechnological processes will prevail in many other areas. too. The development of vaccines, hormones or immune sera for the treatment or prevention of allergics and cancerous diseases, the industrial production of protein and biological fertilisers, biological pest control, sewage clarification, waste recovery and recycling, energy generation, raw material production are only a few of the possible applications.

It may be pointed out here that countries like U.S.A., U.S.S.R., Japan, West Germany, Canada, and Australia, have gone way ahead in reaping the benefits of biotechnology. In India the setting up of the Biotechnology Board augurs well and indicates that the government is conscious of the benefits that this wonderful new technology could yield but concerted efforts will have to be made to make up not only for covering the leeway but also keep abreast of others working in the field.

Distribution of consumer articles in rural areas

Production and distribution of consumer articles are under absolute control of private sector. Rural people can benefit from the distribution system only if cooperatives take the responsibility of implementing the programme. The success of the distribution of consumer articles and essential commodities to the rural people under the new 20-point programme entirely depends on the degree of sincerity and seriousness with which these sectors of cooperative movement share the responsibility as a real partner of the massive national programme.

K. C. BOSE

THE DECLARATION of the 20-Point Economic Programme in 1975 aroused some hopes among the common people particularly the weakers sections of the community. The first point of the specific programme related to the continuance of the steps to bring down the prices of essential commodities, streamlining production, procurement and distribution of essential commodities. It was envisaged that greater responsibility will be shouldered by the cooperatives which are in a better position to cater to the needs of the rural people.

The new 20-point programme declared by the Hon'ble Prime Minister the seventeenth point clearly stands for the expansion of the public distribution system through more fair price shops including mobile shops in farflung areas and shops to cater industrial workers, students' hostels and make available to students, text books and exercise books on a priority basis and to promote a strong Consumer protection movement.

It is quite apparent that in both the 20-point programmes, greater emphasis and weightage have been given on the regeneration of public distribution system with a view to ensuring distribution of consumer articles to the rural people.

Distribution system

Naturally the question arises as to why so much importance is attached to the distribution of consumer articles. The reasons are very much distinct and factual. Because it is an admitted fact that under the present socio-economic set up of the country, it is very difficult to ameliorate the economic condition of the rural people and to bring them above the poverty line. The hopeless results of the implementation of the last Five Year Plans, even after 35 years of independence, are the glaring proof of failure in improving the economic condition of the weaker sections of the community. The most contributing factors is that ours is a developing nation where mixed economy is in full operation. The public enterprises, private organisations and cooperative sectors are allowed to work side by side. When the nation is in a developing process, larger capital investment is inevitable. Moreover, all state and national budgets are deficit budgets. Even the inflow of borrowed capital from inside and outside financial organisations of the country is on the increase day by day. So under such condition the inflation is unavoidable and price spiral will go unrestricted and unabated causing untold sufferings to the common people.

Although the production and distribution of consumer articles are under the absolute control of the private sector and the cooperatives have very little say over it, still some tangible benefits can be given to the rural people through determined and sincere efforts under the guidance and specific programme of the Government. So herein lies the indispensability of such a declared programme with some definite objects.

Suitable organisations

It is now relevant to concentrate the discussion on the types of organisations which are suitable to implement such gigantic programme and that, too would be more justified if these important issues are discussed with reference to West Bengal where multifarious problems are mounting day by day.

Like in rest of India, in West Bengal also there are three types of organisations viz. Panchayat, Schools and Cooperatives which occupy very vital positions in rural areas in influencing social educational and economic activities of the rural people. Among these organisations, the cooperative societies consisting of credit, marketing and consumer societies etc. being the Service-oriented and economic unit, are considered to be the best public organisations to give benefits to the rural people particularly the weaker sections of the community. Therefore, the cooperatives are destined to under take the responsibility of implementating the programme for the benefit of the rural people by approaching and penetrating the vulnerable areas.

In this connection the performance of the consumers cooperative sector of West Bengal which is specially and objectively engaged in distribution of consumer articles, may be discussed to have an idea about its achievements. At present in West Bengal there is one State Federation and 28 wholesale and 2205 primary consumer stores. Of the wholesale stores roughly 3|4th run on profit and 1|4th run at loss. Of the primary stores rughly 44 per cent made profit 24 per cent incurred loss and 30 per cent were defunct. During 1980-81, the sales of confed were 90.20 crores in wholesales Rs. 44.23 crores, in urban primary consumer stores Rs. 66.20 crores and in rural societies 11.92 crores. Thus as on 30-6-81 per capital retail sales are Rs. 14.50 only representing a mere 1.4 per cent of per capita income. Whereas the people in general, spend 50 per cent to 60 per cent of the income for consumption purpose. Consequently the coverage is very negligible and the picture is most discouraging.

Considering all these fundamental factors, the declaration of the new 20-point programme stressing on the distribution of consumer article to rural people has been fully justified and due justice can be given to this programme as well as to the people if it is implemented through cooperatives on emergency basis.

Service Cooperatives

In West Bengal, there are nearly 6600 service cooperatives which have occupied very important positions in rural areas. They have more or less trained managers under the viability programme. They have already undertaken the work of distribution of consumer goods in addition to their supply of crop loan. But the programme should be more vigorously undertaken to meet the requirements of the rural people because they are in a more adventageous and vulnerable position to serve them.

Again the role of 266 marketing cooperatives covering all most all 335 C.D. Blocks of West Bengal is also very much significant in distributing the consumer articles in rural areas. Their working in this respect should be expanded and by materialising the scheme of lead and link societies under NCDC programme, they can conveneiently penetrate the rural areas to serve the weaker sections.

Over and above the existing 45 F.S.S. and 50 LAMPS functioning all over West Bengal under tribal sub-plan and special component plan should be effectively activised so that distribution of consumer articles to the weaker sections may be fully ensured.

Last but not the least is the most important role of existing 28 wholesales 2205 primary stores, 15 departmental stores, 783 retail outlets, 88 Janata shops, 250 students cooperatives in urban areas and 1915 retail out lets in rural areas in respect of distribution of consumer articles both in rural and urban areas under the guidance and control of State Federation. There is enough scope for expanding the activities of this sector and utilising them for the benefit of the rural people.

Potentialities of three sectors of cooperative movement of India should be discussed in this regard. The total number of 1.23 lakhs of primary credit societies, under guidance of 337 District Central Cooperative Banks and 27 State Cooperative Banks, those of 15539 Retail outlets and 55 Super Bazars, 500 wholesales and 14 confeds under the guidance of NCCF and those of 3592 cooperative marketing societies, 380 District|Regional Societies and 29 marketing federations under the guidance of NAFED may be actively involved in this Himalayan task of national programme to contribute largely to the successful implementation of the programme of distribution of consumer articles to both in rural and urban areas.

Need for Review

The constraints and inhibiting factors which stand in the way of working of these cooperative sectors should be removed by all means. Efficient management should be ensured and strong infrastructure should be built up and for that purpose man power planning with suitable training programme of all cooperatives should be formulated. Enlightened leadership will be required to guide and materialise the programme. A very strong and sound feeling of cooperatives and co-ordination should be established amongst all primary, Central Apex and National level organisations and all departments of State and Central Government. Moreover, an oath should be taken by both officials and non-officials leaders to make the programme sure success. The concept of universal membership should be clearly defined, propagated and accomplished in right earnest to ensure more coverage of the rural population. The Consumers protection movement should be launched through the cooperative institutions to safeguard the interest of the rural people particularly the weaker section of the community. Similarly all possible financial assistance should be provided to the cooperatives in the shape of state share participation, godown loan and subsidy and working capital loan and consumption loan also, if practicable. In addition, the national and state level organisations should be enthused to go ahead with the production and distribution of consumer articles by setting up consumer industries like that of "Chintamoni Super Bazar" at Coimbatore district in Tamil Nadu. Even necessary steps should be taken to build up Regional Distribution Centre to ensure the holding of stock regular supply. All types of precautionary and practical and constructive measure should be taken to avoid pilferage, shortage and misutilisation.

The success of the distribution of consumer articles and essential commodities to the rural people under the new 20 point programme entirely depends on the degree of sincerity and seriousness with which these sectors of cooperative movement share the responsibility as a real partner of the massive national programme.

Bullock cart driver owns tractor under 20-point programme

Under the 20-Point Programme Fakhruddin was allotted a piece of land in the command area of the Lunkaransar Lift Canal in Rajasthan. So far Fakhruddin had been making his living by plying bullock cart. With the help of bank loans he levelled the land and got the best seed and fertilizer and has earned Rs. 45,000 from one crop. He has also pruchased a tractor with the help of a bank loan. He has donated a part of his earnings towards the construction of room for the village school. In his days of prosperity he has not forgotten his duty to the community.

K. AHMED

Fakhruddin, a 30 year-old farmer of village Lunkaransar in Bikaner district of Rajasthan now leads a happy and prosperous life. Till 1976, he was plying a bullock cart inherited from his father. He was earning Rs. 4 or 5 daily. This was hardly sufficient for a family of 10 members including ageing parents.

The 20-Point Economic Programme came to his rescue. In 1976 he was allotted a 67 hectare agriculture plot in the command area of the Lunkaransar Lift Canal—an off shoot of the Rajasthan Canal. The land was covered with sand dunes and it was difficult to take any crop thereon until the sand dunes were removed and the land was levelled. The estimated cost of the Project as estimated by me later was Rs. 25,000, which Fakhruddin neither owned nor was able to manage by his own efforts. He knocked at the doors of all Government offices, Cooperative societies and even the village money lenders but to no avail. Hopefully for him, the State Bank of Bikaner and Jaipur (Head Office—Jaipur) opened an agriculture Development Branch in the village specially to cater to the needs of the allottees of surplus land and other farmers, artisans, small business people, Harijans and the weaker section in general.

Fakhruddin was one of the first visitors to this Bank. He was accompanied by Hanuman Suthar and Mohd. Rafiq, two other similarly placed farmers. As they sat on the chairs, they started speaking one by one, demanding small loans and assuring me that they would repay my loans as smoothly as I would like them to do. The lift canal had been completed only that year and water was something very very strange for them. They were determined to make best use of it.

I was fully convinced of the genuineness of their demand but a visit to their field was a pre-condition. They instantly agreed and within some minutes we were in their fields, which were side by side. There were other fields also, all covered with sand dunes and totally uninhabited. They told me that the entire area had been already allotted to farmers like them. The Canal and the duly lined field Channels were having water but the farmers were unable to utilise this water. I surveyed the whole area and found that while parts of the field were covered by sand dunes, there were some lowlying areas also. The problem was clear, The sand had to be carried from the dunes to the low lying parts so that the land became levelled and this had to be done with the help of machines. Rough drawings of all the three fields were prepared be me and we all returned to the Bank on the way back, sitting in the rear portion of the Bank's jeep, they were appreciating my approach to their problem. Their hopes were raised by this visit.

Back in the Bank, I told them that they would have to invest at least Rs. 25,000 each. They received the advice with a jerk. Hanuman Suthar instantly replied, "who gives us that much and even if that much is given, it would be beyond our capacity to repay". Rafiq said, "we don't have any thing with us to invest. We would'nt have come to you if we had even one-tenth of what you want us to invest". I told them that they need not now suffer from want of resources as the Bank would give each one of them the required investment". Fakhruddin said, "We do not want to take heavy loans. Please give us Rs. 3,000 each for a cart and a camel and we would manage with it". Having sold the idea, I thought it desirable to give them some time to work it out. They went with a promise to let me know their views after consulting others in the village and their parents.

Readers may wonder as to why an offer of a loan of Rs. 25,000 against a demand of Rs. 3,000 and that too to the weakest amongst the weak who do not even have the barest means of subsistence. But that is our Bank's policy to give only need based credit facilities. Under-financing results into the failure of the project. The disbursement is, however, phased over 3-4 half years corresponding with the sowing season. As to the contribution of the farmers in implementing the project, it is kept up to the extent of the labour family can put in. It is a pre-condition of the loan that the whole work force is deployed on the project itself.

Fakhruddin came next day only to assert that he will take loan of Rs. 3,000 only for a cart and a camel. He said that Hanuman Suthar and Mohd. Rafiq would also will not take anything more than that and that they would visit the Bank after knowing the outcome of his visit. To ensure their entry in the Bank once, I sanctioned a loan of Rs. 3,000 as desired by him. A few days later, when I visited his farm, I found a small hut having come up and the entire family at work. They had started levelling the land with camel's help. It was not possible. I advised them to hire a tractor which would ensure speedy levelling. His father, quite an old man, at last agreed. A loan of Rs. 5,000 for hiring a tractor and another loan of Rs. 5,000 for seeds, fertilisers and other input was sanctioned. Within some days, about 8 bighas were levelled, which would have otherwise taken some months. The land was ready well in time for Kharif (1973). Jowar and Moth were sown. After six months, the yield was worth about Rs. 6,000. This proved to be an encouraging event. I advised them to take a loan for levelling of another patch of 8 Bighas which they did. A loan of Rs. 5,000 for levelling and Rs. 3,000 for inputs was sanctioned.

Now 16 bigha land was ready. They sowed Rabi (1977) Crop of wheat and mustard. The yield remained below expectation due to erratic water supply. Nevertheless the family decided to have the remaining 6 Bigha land also levelled and approached me for a loan of Rs. 4,000 which was also sanctioned Soon the entire field of 22 Bighas stood fully levelled and they sowed the Kharif (1978) crop thereon. The entire family was happy and joyous to have seen a day when they could see the whole field fully developed and under crop. This seemed a distant possibility for them only a year ago, thanks to the generous help of the Bank. Fakhruddin had by now utilised the entire credit facility of Rs. 25,000 which I had initially estimated to be the minimum requirement.

In the meantime, samples of the soil had been sent by the Bank to the Indian Council of Agriculture Research, New Delhi and other laboratories for their advice, as this was hitherto a barren area. Irrigated cropping operations were quite new to the area. The advice from these specialised institutions suggested the sowing of Groundnut. The recommended quality of seeds was obtained from the National Seeds Corporation Bombay direct by the Bank. All this book about six months. Nevertheless it was well in time for the next sowing season.

Things appeared to be sailing smoothly for Fakhruddin as the Kharif Crop he had sown was growing satisfactorily. It was already half way, when most unfortunately and unexpectedly there were heavy rains in August, 1978. This left crops totally damaged and many homeless. The area had not seen such heavy rains and heavy damages over the past 3-4 decades. He came to me almost weeping. "I am under heavy debts, crops have failed, how I would repay these debts. How would I be able to take the next crop. How the family would survive". I could well understand his feelings. His concern for Bank's dues was quite genuine. I advised him not to be disheartened. The Bank would give him further loan for crop and would not demand the instalment due against Kharif 1978. He was reluctant saying that he was already under heavy debts and what would happen if the future crops also failed due to such unforeseen reasons. But there was no alternative to loan. He agreed.

His previous loans were rescheduled. The Banks provide that in the event of natural calamities like floods, droughts, famines, etc. the demand should be deferred by rescheduling|rephasing|conversion of the loans. These provisions were invoked and a crop loan of Rs. 4,000 was given. Rabi crop 1978 (wheat and gram) was sown in the field. This crop proved to be good beyond expectation. I advised Fakhruddin and his family that any land brought under intensive cropping would take 2 years or so and that they should be satisfied with whatever they could have from the land during these 2 years. In the ensuing Kharif (1979) season, the groundnut seeds, which had been procured from N.S.C. Bombay were sown in 2 hectare alongwith jowar in the remaining 4 ha. Groundnut was also sown on an experimental basis in some other fields likewise developed by Bank's help. The results were very encouraging. In Fakhruddin's field alone the yield was 80 quintals—10 times the seed sown. I advised him to keep some groundnut in stock for use as seed in the year 1980, as procuring these seeds from Bombay again was a tidious job. He was in a hurry to sell the crop as the price was good and he was in a hurry to pay the Bank's dues and some interest. The price at that time was Rs. 190 per quintal. I assured him that at least this rate plus Bank interest would be given to him at the time of next sowing and till then the Bank's Crop dues would not be demanded. The Jowar Crop was left in his hand to take care of other loan instalments, kitchen and other expenses. The family appeared assured, encouraged and settled. At the time of Kharif (1980) this seed was distributed to other farmers at the prevailing market rate, which was Rs. 240 per quintal. He made a profit of Rs. 4,000 just by holding the seed which was almost equal to his loan and interest. Thus the number of fields under groundnut crop increased from 8-10 in 1979 to about 100 in 1980 400 in 1981 and 900 in 1982. The crop yield in 1981 was about Rs. one crore while in 1982 it is estimated to be around Rs. 3 crores In this way the Bank's efforts paid amazing dividends. The Govt. of Rajasthan, has commended these efforts in the following words :—

> "The Lunkaransar area of Bikaner district in Rajasthan was once a vast tract of barren land dotted with thorny shurbs, now it is fast developing into a mighty groundnut

(*Contd. on page 26*)

Sun Lights Sam's Night

SHAKUNTALA MAHAWAL

SAM, a small village in the heart of Thar desert, got a bright new year's gift when its Panchayat Bhavan was illuminated at night by solar energy. Not only the villagers, the foreign tourists who come here to enjoy camel ride are also fascinated. "You are lucky to have the sun shining all day and throughout the year", they remark.

Sam village, situated about 45 Kms. from the historical city of Jaisalmer in Rajasthan, is emerging on tourist map of India. Foreign tourists are struck by the sprawling sanddunes which present a contrast from the green meadows of the West. The contrast may be attractive for the foreigners, however, life for the villagers has not been so easy.

With the cattle breeding as their main occupation, at the day break they have to go out with the stock of sheep and goat in search of leafy food which is hard to get. Wandering in the desert, they play soft and sensitive folktunes on 'Morchang' or 'Ravanhatha'. When night comes they take shelter in their lantern-lit-lonely huts. The density of population in this area is lowest in the country, though highest among the other desert areas of the world.

Noon in darkness

The evening of December 6, 1982 had something good in store for them. Together in the Panchayat Bhavan all the villagers saw a wonder happen. A solar panel containing 20 plates got the solar energy stored in batteries in the day time and as the darkness was trying to cast its spell, Solar energy broke it with illuminating eight tubelights.

In this solar energy-lit Panchayat Bhavan, adult education classes are now being run for more than 40 villagers. After day's hard work the village elders come here to learn three Rs. and are informed about rural development programmes of the Government. They listen to the latest news on transistor which works on reflected sunrays and at night with the help of batteries storing solar energy.

Solar energy, only answer

In fact, the desert districts with vast distances to be traversed to reach scanty population pose a challenge before the Development Departments in Rajasthan. Taking long transmission lines, for instance to electrify such villages is a costly affair. It was to overcome this difficulty that the Department of Science and Technology took a decision in July, 1982 to establish a Solar Energy Centre at Sam village as a part of the phased programme. With the help of the Central Electronics Ltd., the solar energy panel was installed to usher in a bright and happy new year for the villagers.

At present, installation of the Solar panels may look a small achievement, but it does hold a hope for the future. THOUGH A TINY STEP, IT IS A STEP AHEAD.

(*Continued from page 25*)

growing region........this brackish water belt is emerging as Rajkot of Rajasthan".

The Kharif (1980) crop yielded Rs. 30,000 worth of groundnut. Fakhruddin was now fully relieved of all Bank loans. He had a surplus of Rs. 10,000 besides owning a fully developed 6 ha farm, 2 cows, a camel with a cart. His parents wanted the cash surplus to be donated for a charitable public work. I was asked how best to use this. Seeing them determined on the idea, I advised them to construct a room in the village school. They agreed and soon a room with electricity and a ceiling fan came up. This became a unique thing for the whole area. His old father told me that due to their poverty, they had not been able to take any notable part in this field. He had the firm conviction that God would give them still more during the years to come.

Next year Fakhruddin got Rs. 45,000 from the crop. He took some loan from the Bank and purchased a tractor of his own. He had some other land in his father's name, which he would develop with his own tractor. What a change from the life of bullock cart driver. Thanks to the 20-Point Economic Programme and the generous help of the Bank.

Hanuman Suthar and Mohd. Rafiq have also been established similarly. These stories are being repeated on the farms of 40 farmers belonging to the Weaker Section in this desert area of Rajasthan and they will all be likewise owning their own assets and lead a prosperous life in the couple of years to come. ☐

Janata Handloom Cloth

THE Government of India introduced a scheme in 1976 for the production of cheap cloth for the economically weaker sections of the community. The Handloom Sector (aided by Government) produces this fabric. In Tamil Nadu 28,000 looms, engaged in the production of Janata fabrics, produce 10 per cent of the total Janata cloth produced in the country. The production has gone up, to 280 lakh sq. mtrs. in 1982. Co-optex produces and sells this cloth both within Tamil Nadu and elsewhere in the country. It has been endeavour of the Handloom Department of the State Government to ensure that the quality of low priced Janata Cloth is as high as possible.

A selection of Janata sarees produced in Kancheepuram was on display recently at the Co-optex New Show Room at Madras.

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Female literacy in Tamil Nadu

The progress and spread of literacy among urban women and rural women has been quite encouraging though not uniform. But the gap between the highest and lowest urban female literacy rates has widened.

YERRA NAGESWARA RAO

LITERACY is an important feature of demography. However, the modern concept of literacy was evolved in 1971 census, when a literate was defined as a person who can both read and write with understanding in any language.

Tamil Nadu is the home of nearly 7.06 per cent of country's population. The present Tamil Nadu State ranks 7th in respect of population and third in respect of literacy (after Kerala, and Maharashtra). According to 1981, census, of the 4,82,97,456 population of Tamil Nadu 2,21,11,593 were literates with an overall literacy of 45.78 per cent. Of the 2,44,20,228 of male population 1,39,65,132 (57.19 per cent) were literates. Among the female population of the state *i.e.* 2,38,77,228 literacy rate was 34.12 per cent.

The levels of literacy in Tamil Nadu are not uniform and present a diversified picture at different census periods. Again the trends are varied from district to district on one hand and from rural to urban on the other hand both in respect of male and female literacy.

After independence, the literacy rate has improved significantly which can be seen from 1951 census figures. The general literacy rate improved appreciably to 28.85 per cent, while the male literacy was 31.73 per cent the female literacy was at 10.06 per cent. When we look at the latest census periods of 1971 and 1981 we can see a better picture than the one in the earlier census periods. By 1971 the general literacy rate went up to 39.46 per cent, among males to 51.78 and females to 26.86 per cent. At the 1981 census the general literacy for Tamil Nadu further went up to 45.19 per cent (which is considered to be more than all India average by nearly 10 points). For males it has further risen to 57.19 per cent and among females at 34.12 per cent.

No doubt as far as the general levels of literacy is concerned, a spectacular change has occurred in the post-Independence era, yet an up-hill task is ahead of us, as we have to penetrate into the field of women's literacy which is still at the low level, particularly in rural areas.

Since independence the Government of India has been implementing special programmes pertaining to women's education. Despite all these the position of women's education is not significantly improved over the past decades. A detailed study on progress and pattern of literacy needs cross sectional data which will be possible only after publication of 1981 census final tables. Here in this article I have confined myself mainly to the Tamil Nadu female literacy with emphasis on rural female.

The article is mainly aimed at :—

(a) Studying the progress of literacy among female population in Tamil Nadu in general and

(b) Presenting a comparative view in literacy status of urban female to rural female during the last three census periods.

In 1961 census, out of 1,67,75,975 females in Tamil Nadu only 30,48,293 were literates. However in the subsequent census periods of 1971 and 1981 the total number of female literates has gone up to 54,72,,610 and 81,46,461 respectively. No doubt the trend among the general female in the state is encouraging. But the trend in the rural areas is somewhat lagging behind, which can be seen from the figures. Out of 1,23,64,839 female who lives in the rural areas only 14,30,653 were literates in 1961. Though the figures regarding rural female showed some improvement in the subsequent periods, yet the rate of increase in the literacy among rural female is slower than among urban female. Here the rate of literacy in urban female has increased from 45.42 per cent in 1971 to 53.81 per cent in 1981 census. Whereas the rural female literacy rate increased from 18.93 per cent in 1971 to 25.04 per cent in 1981 census.

The progress and spread of literacy among urban women and rural women was not uniform. Also it varies in different districts of the state in respect of women. In certain districts the progress is quite impressive.

Increasing gap

Among all the districts in the state gap between the highest and lowest Urban female literacy rates (UFRL), with the passage of time, has widened instead of narrowing down. For instance in 1961 census the highest urban female literacy rate was 49.50

per cent (Kanya Kumari) and the lowest was 28.20 per cent (Salem). With the passage of time at the 1971 census the gap slightly widened as the highest UFLR reached at 60.56 per cent (Kanya Kumari) and lowest was 37.23 per cent (Salem). At the latest census of 1981 the gap further increased with highest UFLR being 68.05 per cent and the lowest being 44.33 per cent.

A similar view can be observed in respect of rural female literacy rate (RFLR) during the corresponding three census periods. Though the gap between highest RFLR and lowest RFLR is somewhat bigger when compared to UFLR, one striking feature in the rural areas is that with the passage of time the gap (though marginal) contrary to urban female rates has declined. Now let us see, how these trends varied over the three census periods. In 1961 census the highest RFLR (Barring Madras district which is a cent per cent urban area) was 39.20 per cent (Kanya Kumari) and lowest was 6.5 per cent (Salem). Similarly as in the case of urban female with the passage of time at 1971 census the gap significantly widened as the highest at 50.43 per cent (Kanya Kumari) and lowest at 10.20 per cent (Dharmapuri). And at the 1981 census the gap further widened with highest RFLR being 54.53 per cent and the lowest being 15.48 per cent. The gap between highest and lowest RFLR at 1961, 71 and 81 census was of 32.7, 40.2 and 39.05 respectively.

Increase not uniform

No doubt, the UFLR and RFLR has gone up in all the districts, yet the growth of literacy rates in different districts is not uniform. Often a question arises as to why the rates vary among districts ? What reasons are responsible for different growth rates ? The probable reasons may be the social, economic and availability of opportunities. The trends in literacy rates can also be viewed by grouping districts according to different ranges of their literacy rates (Table No. 1). Here, according to 1961 census as far as rural female literacy is concerned, there were as many as 11 districts out of 13, where RFLR was less than 20 per cent. The only district out of this limit was Kanya Kumari having an impressive rate of 39.2 per cent. The four districts where the literacy rate was more than 20 per cent were Kanya Kumari, Nilagiri, Tirunelveli and Thanjavur respectively. If we look at 1981 census, the results are however further improved over the preceding periods. Here there are only 3 districts having literacy rates below 20 per cent and as many as 13 district out of 16 have improved their rates significantly over and above 20 per cent level. As far as rural female literacy rates are concerned Kanya Kumari has continued to be ranked first in all the three census which is closely followed by Nilagiri, Tirunelveli and Thanjavur respectively.

Encouraging Progress

The overall progress of literacy in Tamil Nadu is quite encouraging. The all round progress achieved during the last three census periods can be observed from the fact, the female literacy rates are gradually catching up with that of male growth rates. Though the general progress is encouraging yet the spread of literacy is not uniform among all districts and further the gap between the extreme literacy rates has further widened in all the districts, which may be attributed to a variety of reasons like social, economic and availability of educational facilities and opportunities.

Although the general literacy rates are encouraging, there should not be any complacency at this stage, and a lot has to be done in respect of rural areas. Since the backlog in the rural female literacy is mainly caused by the Socio-economic features and local factors and since the existing system of education is almost exclusively formal and relies mainly on full time institutional instruction, the best thing will be is not only to introduce and implement various schemes (like formal, non-formal and adult education etc.) but also encourage voluntary organisations in the field to supplement the Government activities as well as to eliminate the social evils which are the barriers in the way of women's education.

Finally, it is not just a question of how many schemes are implemented and how much money invested on these, but what matters is how the facilities are utilised by different sections of the people. Since the present Government in Tamil Nadu is keen on formulating and implementing various progressive policies for development, it may not be difficult for the government to tackle the problem in rural areas if suitable programmes are implemented in right earnest.

Table No. 1

Grouping of districts by Rural Female Literacy

Rural female Literacy (N)	1961 census	No. of Districts 1971 census	1981 census
Upto—5	—	—	—
5.01—10	4	—	—
10.01—15	6	3	—
15.01—20	1	6	3
20.01—25	—	1	7
25.01—30	—	2	1
30.01—35	—	—	2
35.01—40	1	—	1
40.01—45	—	—	—
45.01—50	—	—	—
50.01—55	—	1	1
55.01—60	—	—	—
Total Districts	12	13	15

Note : Madras district has been omitted from the classification as it does not constitute any rural segment.

READERS' FORUM

Population situation and minorities

ONLY recently I came across a piece. Population situation and Minorities, by Dr. Sreedhara Swamy, published in the Republic Day Special of Yojana pp. 45-46, 26 January 1983. Some of the facts and conclusions, and the method of presentation are very disturbing. I give just few illustrations.

1(a) The first table (it has not been numbered) : Indian Population and Religious Groups, shows data for the years 1921, 1931, 1951, 1961 & 1971 respectively. Whatever the source of the data, it should have been understood by the researcher that 1921 and 1931 data include Pakistan and Bangladesh, unless one can take tremendous strain and pathological impartially to sift out 1921 and 1931 data corresponding to the present day India from the data on India as it was in 1921 and 1931. The study should, therefore, be based on 1951, 1961 and 1971 data only. The result of this is presented above.

Indian population & religious groups

Religious group	Percentage of share of Indian population			Variation in population between		
	1951	1961	1971	1951 & 1961	1961 & 1971	1951 & 1971
Hindus	848.98	83.51	82.72	—1.47	—0.79	—2.26
Muslims	9.91	10.70	11.21	+0.79	+0.51	+1.30
Christians	2.35	2.44	2.60	+0.09	+0.16	+0.25
Sikhs	1.74	1.79	1.89	+0.05	+0.10	+0.15
Buddhists	0.05	0.73	0.70	+0.68	+0.03	+0.65
Jains	0.45	0.46	0.47	+0.01	+0.01	+0.02

Main inferences

(1) The decrease in Hindu population is much larger (nearly one and a half-times) in a much shorter (less than half) period mentioned in the paper. We find here a decrease of 2.26 per cent in 20 years as opposed to 1.68 per cent in 50 years.

(2) The Hindu population has been experiencing a downward trend all the time, the Muslim population has never done so. The latter's movement is always upward, though sometime of a smaller magnitude.

2. Table 3 : Percentage distribution of acceptors, should be recast so that comparison is made between sterilisation (1968-69) and sterilisation (1979-80), and between IUD (1968-69) and IUD (1979-80). Like characteristics must be juxtaposed in order to make a meaningful comparison and arrive at irrefutable conclusions.

Percentage Distribution of Acceptors

Religious Group	Sterilisation			IUD		
	1968-69	1979-80	Variation	1968-69	1979-80	Variation
Hindus	88.4	88.6	+0.2	82.4	84.6	+2.5
Muslims	5.2	5.9	+0.7	7.2	7.4	+0.2
Christians	1.7	3.3	+1.6	2.5	2.5	Nil
Sikhs	2.4	1.4	+1.0	5.6	5.5	—0.1
Others	2.3	0.8	+1.5	2.3	0.7	—1.6

Conclusions

Among the Hindu family planning acceptors, sterlisation appears to have lost some popularity, whereas IUD has gained some; but, on the whole, there has been an increase in the percentage of family planning acceptors. Among the Muslims, sterilisation acceptors have increased their percentage slightly, but the IUD users' increase is very insignificant. The Sikhs and others seem to be gradually giving up family planning.

3. Table 4 : Percentage Distribution of Acceptors 1979-80, is reproduced here (Indian part only).

Percentage Distribution of Acceptors

Religious group	INDIA			
	% of total population 1971	Vasectomy	Tubectomy	IUD
Hindus	82.7	89.2	88.3	83.9
Muslims	11.2	6.6	5.6	7.4
Christians	2.6	2.1	3.7	2.5
Sikhs	1.9	1.1	1.6	5.5
Others	1.6	1.0	0.7	0.7

Looking at Indian population in its entirety, one can easily notice that with respect to all the religious groups (except the Muslims), the per cent in the total population and the percentage using Vesectomy/Tubectomy|IUD are in good conformity. In the case of the Muslim religious group, one cannot fail to observe that though this group forms 11.2 per cent of the total population, its percentages among Vasectomy, Tubectomy and IUD users are respectively 6.6 per cent, 5.6 per cent and 7.4 per cent. Each figure is significantly less than 11.2 per cent.

S. N. Ghosh,
9, Bakery Road,
Calcutta-700022.

I have gone through your Republic Day Special Issue. The article "Population problem a planner's view" by S. B. Chavan is undoubtedly a good one but he has not touched the common problems of the people adopting family planning for their betterment. No doubt that the cash incentives and other priorities will attract people for family planning but main problem seems that there is no discipline in the society and it is common knowldege of the people that manpower is a must for a family to protect itself from the harassment by unsocial elements. For instance, I am furnishing my own experience. I come from a poor family having 3 to 4 acres of unirrigated cultivable land. I am the only son of my parents. With great difficulty I graduated and got a job in Rourkela Steel Plant in 1965. My parents died in 1969-70 and I inherited the parental property. I also underwent sterilisation (as I am having two children) with the hope of leading a happy life. As soon as I was discharged from the hospital, I received a letter from one of my friends from the village saying that somebody had occupied my cultivable land forcibly. You can imagine my plight. I am working at a distance of 590 Km. from my village. What is the use of family planning if a man is harassed like this. I cannot shed a blood on the spot as I am alone and educated. There is one way to go to the court of law and ultimately I will be in deep trouble both financially and mentally. Any family, due to anxiety, will never suggest a person to undergo sterilisation. Will Govt. give special consideration for my problem ? You are requested to think over the this problem. Such a problem is not for me alone but with every person working far away from his native place. It is my earnest request to bring the fact to the notice of the Government for success of this planning.

M. Prasad,
Qr. No. E/177,
Sector 20,
Rourkela-1 (Orissa)

Theft Proof Bank-Note Cassette

A cash register bank-note cassette system for the retail trade which is claimed to sharply reduce the risk of robberies and eventual financial loss is under development at Esselte Regna, Solna, outside Stockholm. Instead of placing bank notes in the cash register, check-out personnel, for example, feed them into a cassette, called Mini Guard, which automatically counts their value and registers which type of notes it has handled.

The cassette is later delivered to the shop's bank, which provides a receipt and opens the cassette via a special terminal. It is said to be impossible for an unauthorized person to open the Mini Guard cassette. If such an attempt is made, the bank notes are automatically destroyed.

If a robbery should occur, check-out personnel can hand over the cassette without qualms since, according to the manufacturers, there is no possibility of the thief acquiring the bank notes. Similarly, transport between shop and bank is largely risk-free.

The cassette, which is microprocessor -based, will be available in alternative versions to suit both small businesses and larger stores. For example, bank notes can be fed into the cassette manually, and accounts kept in the same manner, or the process carried out via a feeder/calculator unit serving up to four cash registers and providing totals on a display or paper tape.

The Mini-Guard was developed in cooperation with the National Council for Crime Prevention, banks, insurance companies and the retail trade.

(News Letter from Sweden)

ECONOMIC NOTES

Best exporter Award for BHEL

THE state owned Bharat Heavy Electricals Limited in New Delhi has received awards of best exporter for 1979-80 and top exporter for 1980-81 for northern region from Engineering Export Promotion Council

Shri Rajiv Gandhi, M.P., ceremoniously presented the awards to Shri K.L. Puri, Chairman, and Managing Director, BHEL at a function organized by the council in New Delhi recently.

BHEL has so far bagged export orders totalling nearly Rs. 600 crores from 40 countries. These include developing nations of Asia, Africa and Middle East and developed countries like USA, Australia, and New Zealand. The awards have been bagged by BHEL for performance in Export arena.

National mineral awards

THE Ministtry of Steel and Mines have announced seven awards for outstanding contributions in the field of earth sciences. The award winners are Dr. S. Singha Roy, in Fundamental Geology, Shri T. C. Rampuria in Applied Geology, Dr. Debabrata Chandra, Shri N. B. Subramanyan and Shri I. G. Aggarwal in Mineral Beneficiation, Shri S. V. Kothari, in Mineral processing and Shri T. N. Singh in Mine planning.

The awards are given annually for outstanding contributors in geology, geophysics and geochemistry including their applied aspects such as exploration, beneficiation, mineral chemistry, mineral physics, mineral economic and mining research.

Need to increase availability of edible oils

SHRI BHAGWAT JHA AZAD, Union Minister of State for Food and Civil Supplies, has emphasised the need of increasing the availability of edible oils for the masses. He has said that as against the minimum nutritional requirement of about 20 kg. of fat per capital per annum, as specified by the Indian Council of Medical Research, the availability varied between 5 to 6 kg. annually. The consumption by the poorer and vulnerable sections of the society was still lower. The Minister said this while inaugurating the seminar on the use of palm oil in Vanaspati manufacture in New Delhi recently.

Urging the scientists and technologists to play a vital role in increasing the indigenous availability of edible oils, the Minister said that green revolution on the agriculture front has now to be followed by a similar revolution on the agriculture front has now to be followed by a similar revolution in oil seeds. He also said that there was need to evolve new varieties of oilseeds having higher production potential

Referring to the gap in the demand between the availability of edible oils and its availability, the Minister said that while the requirement was between 34 to 38 lakh tonnes the indigenous production ranged between 24 to 27 lakh tonnes annually.

To meet this existing gap the government was importing about 10 lakh tonnes of edible oils every year for which the country has to spent valuable foreign exchange of about Rs. 600-700 crores annually, he added.

Marked increase in export of fruits and vegetables

EXPORTS of fresh fruits and vegetables have doubled during the first ten months of 1982-83 (April 1982—January 1983) as compared to the corresponding period of the preceding year. This was revealed in a recent meeting of the exporters of fresh fruits and vegetables with the Commerce Secretary, Shri Abid Hussain.

Exports of fresh fruits for the first ten months of this year have been tentatively placed at 15,402 tonnes valued at Rs. 12.19 crores as compared to the export of 7,110 tonnes valued at Rs. 6.15 crores during the corresponding months of 1981-82 registering a more than 100 per cent increase. In case of fresh vegetables, the exports during the same period have been placed at 1,0013 tonnes valued at Rs. 6.38 crores against the exports of 5186 tonnes valued at Rs. 2.28 crores during the previous year. This indicates that while quantitatively the exports of fresh vegetables have been doubled, in value terms it has registered almost three-fold increase. Exports of vegetables and fruits are placed on open general licence.

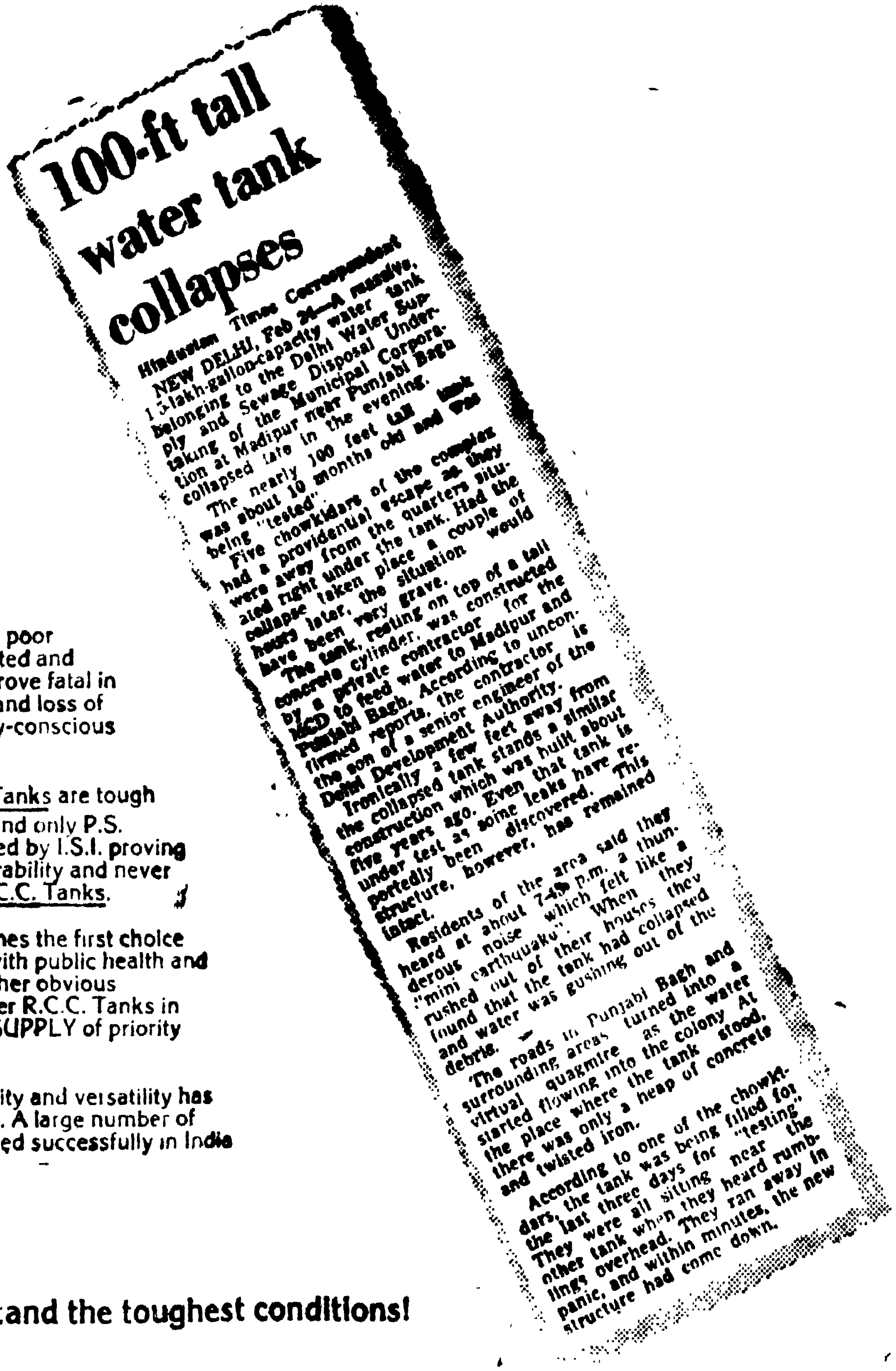
Tamil Nadu Government extends Nutritious Meal Programme

THE Government of Tamil Nadu is at present supplying free of cost nutritious meals, once a day, to the poor children in the State. This scheme has now been extended to the old age pensioners. The cost of a meal exclusive of other incidental charges will be 90 paise.

The Old Age Pensioners are already getting a cash allowance of Rs. 35/- p.m. In addition to the cash payment the pensioners are provided with sarees and dhoties twice a year and one kilo of fine variety rice per week per person free of cost.

EVIDENCE!

The Collapse of a RCC water storage tank.



100-ft tall water tank collapses

Hindustan Times Correspondent

NEW DELHI, Feb 24—A massive, 1.5-lakh-gallon-capacity water tank belonging to the Delhi Water Supply and Sewage Disposal Undertaking of the Municipal Corporation at Madipur near Punjabi Bagh collapsed late in the evening.

The nearly 100 feet tall tank was about 10 months old and was being "tested".

Five chowkidars of the complex had a providential escape as they were away from the quarters situated right under the tank. Had the collapse taken place a couple of hours later, the situation would have been very grave.

The tank, resting on top of a tall concrete cylinder, was constructed by a private contractor for the MCD to feed water to Madipur and Punjabi Bagh. According to unconfirmed reports, the contractor is the son of a senior engineer of the Delhi Development Authority.

Ironically a few feet away from the collapsed tank stands a similar construction which was built about five years ago. Even that tank is under test as some leaks have reportedly been discovered. This structure, however, has remained intact.

Residents of the area said they heard at about 7-45 p.m. a thunderous noise which felt like a "mini earthquake". When they rushed out of their houses they found that the tank had collapsed and water was gushing out of the debris.

The roads in Punjabi Bagh and surrounding areas turned into a virtual quagmire as the water started flowing into the colony. At the place where the tank stood, there was only a heap of concrete and twisted iron.

According to one of the chowkidars, the tank was being filled for the last three days for "testing". They were all sitting near the other tank when they heard rumblings overhead. They ran away in panic, and within minutes, the new structure had come down.

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Books

Changing Rural Scene

India's Changing Rural Scene 1963—1979 ; Gilbert Etienne ; Oxford University Press, New Delhi, 1982 ; pp. 231, Price Rs. 90.

AT a time when rural development in India has been given renewed vigour and importance in the light of Prime Minister's 20 point programme, the book under review delineating the varied aspects of India's rural development after an on-the-spot observation by the author is a worthy exercise that deserves to be accorded plaudits. In this book, Prof, Etienne of the Institute of Development Studies, Ganeva, has come out with a document that focusses the stress on fostering and facilitating rural regeneration, a task on which the hope of million in the country is pinned. Agricultural and non-agricultural activities, growth trends as well as the pattern of income, with particular attention given to small farmers and landless labourers forms the fulcrum of this field study that the author undertook during his two trips to India in 1963-64 and in 1978-79.

The author is of the view that though a frontal attack on poverty may help in the gigantic task of rural development in India, the path to improvement seems to lie in the pursuit of better economic policies. These are improving soils and carrying out through water surveys and a more drastic water management policy with better emphasis on irrigation and drainage. A plentiful provision of basic inputs is more essential than credit and this will also go a long way in curbing corruption and other malpractices, that have unfortunately become the bane of the bureaucracy.

The author was visibly inspired by the practice of ancient rulers who used to tour their provinces to get a grasp of people's problems. Proceeding on the premise that such a practice would give a first hand knowledge, Mr. Etienne contends that the revival of this practice would help in building up the needed knowledge on the problems plauging the people.

The author has scored a gain in so far as his knowledge of Hindi has enabled him to understand the rural Indians and their myriad problems. He has also made comparative references to China and other Asian countries and emphasised the widening gulf between the rhetoric of armchair planners and cafteria revolutionaries and rural life.

The book is evenly divided into two parts with one dealing about the author's field experience and another spelling out measures to combating rural poverty the book would have been popular had its cost not been prohibitive.

G. Srinivasan

An Excellent publication on Gandhiji

Gandhi—A life ; Krishna Kripalani ; National Book Trust of India ; New Delhi ; pp. 200 Rs. 20.

AS a highly accalimed work of the author, by press and personages, every since its first appearance in 1968, the volume now enjoys the good offices of the National Book Trust to reappear as a second reprint.

Krishna Kripalani, an invulnerable biographer of certain national dignitaries and a veritable man of letters needs no formal introduction. But considering the scores of books written on Father of the Nation in wider perspective of his life, mission, ideals work and achievements, it cannot be gain-said that the author, in describing Gandhi's life and life only, has skillfully adhered to the well-defined intent and purpose of the study, in his scholarly chaste and vivid style of the narrative coming up to the needs of a readership from the lay-level on to the intellectual stratum. One feels like fondly re-iterating that those who hold the trust of the nation in the realm of book production will do well to redeem a gesture espoused in the words of C. Rajagopalachari—"arrangements should be made to render the book in all the Indian languages and distributed in all the schools."

The volume is exceptional in its readability, has been produced well and priced realistically.

Rashmi Khorana

Our Contributors

B Sivaraman, ICS (Retd.)—former Member, Planning Commission ; **S. Sundararajan**—Joint Secretary, Planning Commission; **Dr. V. R. Panchamukhi**—Research Professor, Centre for Policy Research, New Delhi ; **Suraj Saraf**—freelance journalist, Srinagar ; **K. C. Bose**—Lecturer, Netaji Subhash Cooperative Training College, Kalyani, West Bengal; **K. Ahmed**—Development Officer, State Bank of Bikaner & Jaipur, Bikaner, Rajasthan ; **Mrs. Shakuntala Mahawal**—Information Officer, PIB, Jaipur ; **Yerra Nageswara Rao**—11 PA, New Delhi ; **G Srinivasan**—PTI, New Delhi ; **Miss Rashmi Khorana**—freelance writer.

The 20-point programme monitoring cell reports . . .

13

Checking population growth

The Sixth Plan document has laid down the goal of reducing the birth rate to 21, the death rate to 9 and the infant mortality rate below 50. This target will require that the percentage of couples practicing family planning should go up from 22.5 per cent to 36.5 per cent by 1984-85. As against a target of 44.6 lakh sterilisations, 32.99 lakh sterilisations were performed upto the end of February 1983. State-wise performance above 50% of the required average is given below :

State	Target	Achievement April—Feb.	% achieved
Sikkim	**300**	**440**	**146.7**
Maharashtra	**4,73,000**	**5,13,518**	**108.6**
Himachal Pradesh	**26,000**	**27,933**	**107.4**
Punjab	**1,02,000**	**1,04,807**	**102.8**
Haryana	**84,000**	**75,351**	**89.7**
Andhra Pradesh	**3,91,000**	**3,13,937**	**80.3**
Madhya Pradesh	**3,82,000**	**2,90,057**	**75.9**
Gujarat	**2,60,000**	**1,95,260**	**75.1**
Tamil Nadu	**2,92,000**	**2,17,856**	**74.6**
Orissa	**1,74,000**	**1,28,156**	**73.7**
Kerala	**1,60,000**	**1,16,540**	**72.8**
Karnataka	**3,05,000**	**2,15,123**	**70.5**
Rajasthan	**2,15,000**	**1,32,427**	**61.6**
Uttar Pradesh	**6,21,000**	**3,82,043**	**61.5**
West Bengal	**3,57,000**	**2,19,351**	**61.4**
Bihar	**4,18,000**	**2,55,219**	**61.1**
Assam	**91,000**	**48,153**	**52.9**

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The 20 point programme monitoring cell reports . . .

11B

Pumpsets energised

The rural electrification programme is geared up towards achieving the goal of bringing three million hectares of land under irrigation in each of the remaining three years of the Sixth Plan. Energisation of pumpsets enable the irrigation of new areas. As against a target of 3.78 lakhs, 2.59 lakhs pump-sets have been energised upto the end of February 1983. State-wise performance above 50% of the required average is given below :

State	Target	Achievement April—Feb.	% achieved
Jammu & Kashmir	28	65	232.1
Himachal Pradesh	100	113	113.0
Karnataka	21,000	21,258	106.3
Maharashtra	60,000	62,301	103.8
Madhya Pradesh	32,000	30,745	96.1
Rajasthan	10,000	8,397	84.0
Andhra Pradesh	56,000	41,930	74.9
Kerala	12,000	8,935	74.5
Punjab	20,000	14,148	70.7
Haryana	20,000	14,123	70.6
Tamil Nadu	30,000	19,212	64.0
Tripura	300	178	59.3
Orissa	5,100	2,743	53.8

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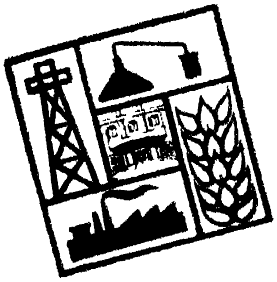


Why labour unrest ?

Vol. 27 No. 8

yojana

MAY 1–15 1983 RUPEE ONE

The two views,
AITUC, FICCI

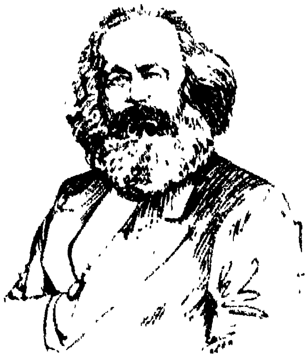
NEXT ISSUE

What Government
does to arrest
labour unrest

“The greater the social wealth, the functioning capital, the extent and energy of its growth, and, therefore, also the absolute mass of the proletariat and the productiveness of its labour, the greater is the industrial reserve army. The same causes which develop the expansive power of capital, develop also the labour power at its disposal. The relative mass of the industrial reserve increases therefore with the potential energy of wealth. But the greater this reserve army in proportion to the active labour-army, the greater is the mass of a consolidated surplus population, whose misery is in inverse ratio to its torment of labour. The more extensive, finally, the Lazarus-layers of the working-class and the industrial reserve army, the greater is official pauperism. This is the absolute general law of capitalist accumulation. Like all other laws it is modified in its working by many circumstances, the analysis of which does not concern us here.

The folly is now patent of the economic wisdom that preaches to the labourers the accommodation of their numbers to the requirements of capital. The mechanism of capitalist production and accumulation constantly effects this adjustment. The first word of this adaptation is the creation of a relative surplus population, or industrial reserve army. Its last word is the misery of constantly extending strata of the active army of labour, and the dead weight of pauperism.”

The Capital



YOJANA

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The Symposium

Why Labour Unrest?

G. K. DEVARAJULU 4 "A qualitative drift in trade union activity"

T. N. SIDDHANTA 7 Are trade unions really responsible ?

E. VASU 12 A Mahout gets an elephant for the asking

CH. BHAGWAN RAO 14 Promise and performance of tribal development agencies

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Yojana seeks to carry the message of the plan to all sections of the people and promote a more earnest discussion on problems of social and economic development. Although published by the Ministry of Information and Broadcasting, Yojana is not restricted to expressing the official point of view. Yojana is issued every fortnight in Assamese, Bengali, English, Gujarati, Hindi, Malyalam, Marathi, Tamil, Telugu and Urdu.

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"A qualitative drift in trade union activity"

Alleging a qualitative drift in the trade union movement and its vertical and horizontal split, multiplicity of unions, inter and intra union rivalry, tardy implementation of labour laws as the villains of piece, causing labour unrest in the country, the author pleads for a deeper analysis and understanding of the problem to help establish industrial harmony.

Shri G. K. Devarajulu, President, FICCI

ONE is often made to wonder why a developing country like India should become subject to recurring industrial unrest which has tended to grow from year to year. In our quest to guarantee safe working conditions, and a reasonable wage, and to take care of industrial hazards and post-retirement life, a detailed network of labour legislation has been enacted. Perhaps our social security system is far ahead of that of industrialised countries. It is equally true that our legislative coverage is not equalled by any other country, developed or developing. Yet, industrial strife has grown, number of mandays lost multiplied, intimidation, violence, coercion and gherao have been used to press industrial demands. There is a qualitative drift in the trade union activity. The last decade has witnessed a vertical and horizontal split in trade union movement. While in 1975 there were four national trade unions, today there are as many as eleven. Possibly, all these factors cumulatively have led to a steady deterioration in the industrial relations climate of the country.

Let us have a look at the industrial relations landscape. In the absence of anything better, the number of mandays lost in a year can be regarded as a working barometer of the industrial climate. In 1974, 40 million mandays were lost which was a record setting year. The number came down to 12 million in 1976 and reached another peak in 1979 with 43.8 million mandays lost. Happily, a downswing was noticed in 1980 with 22 million lost mandays. That can be regarded as an exceptional year because there was a steep rise in 1981 with 32 million mandays lost. But most unfortunate year has been the 'Year of Productivity' in which over 62 million mandays are estimated to have been lost due to strike in Bombay Textile Mills alone. For the rest of the country mandays lost due to strikes and lockouts, excluding Bombay strike, is estimated at 43.38 million. The value of estimated production loss in 1982 is Rs. 174.69 crores, while for the Bombay textile industry it is about Rs. 750.00 crores.

Eloquent as these figures are they necessarily raise a poser, i.e. whether all is well with our industrial relations system and invite every well meaning section to ponder over the reasons for this unsavoury development with a view to finding rational solutions.

The villains of piece

There is no point in giving ready-made answers to this question. Multiplicity of unions, inter and intra union rivalry, tardy implementation of labour laws are cited as the villains of piece. They certainly are. But the issue for debate is why these unhealthy forces have developed and why effective remedial measures are not taken to curb them. A deeper analysis and understanding is required which alone would help establish industrial harmony.

Historically speaking, the trade unionism in the country is an off-shoot of freedom movement of twenties, thirties and forties. The unions did play a significant role in achieving Independence. In post-Independence period, the trade unions have become stronger but unfortunately splintered as well. Every political party has made deeper in-roads in the trade unions and as a consequence trade unions of different hues and stripes have come into being. Differing political suasions and ideological stances have obviously infested the union work style and competitive trade unionism has grown in direct proportion to political vying and competitiveness. More often than not, political differences have been carried to industrial establishments and work stopped for reasons other than industrial. It is forgotten that a responsible opposition is an essential adjunct to democracy, but it leads to disastrous consequences when carried to factories and establishments. If there is collective action to demand good working conditions or reasonable payments, there is no quarrel. But when demands are pitched too high to secure political upmanship against the other union, production suffers, productivity goes down and consumers at large are made to hold the empty buckets.

Another outcome of the intense politicisation of the unions is that much meaningful dialogue between management and labour is by-passed and the bridges of understanding burnt. Moreover, the leadership still being drawn from outside, its motivation is often at variance with that of the workers. The industrial relations, therefore, become confrontationist rather than conciliatory and workers are misled and incited to stop work. Political bandhs, gheraos, demonstrations and agitations have thus become endemic. Additionally, politicking has inhibited the growth of leadership from among the workers themselves. It must be added here though in a democracy no group can be immune from political influences, but a line has to be drawn when politics should stop and growth interest is made a primary concern.

Legislation flouted

It is admitted that as the industrialisation proceeds and the number of wage-earners grow, labour legislation becomes an important instrument for regulating employer-employee relations. Interconnection between labour legislation and the development process has thus come to be widely recognised. In India the legal and social policy of Government in the field of labour has been so framed as to take care of every possible facet of industrial life. Yet, they have not helped the growth of either the committed work force or creation of necessary work ethos which has made Japan such a strong industrial power. It is pertinent to ask, if legislation was the answer to industrial problems, we should have perfect harmony between labour and management. That has not happened. The legislation, therefore, has come to lose respectability, since it is flouted with impunity. The reasons are not far to seek.

In our haste to enact laws and regulations, we have borrowed foreign models, often those provided by highly industrialised countries, or adapted provisions from the standards set by International Labour Organisation. This has resulted in the labour legislation being unrelated to the stage of economic growth, the position of wage earners within the total work force, the level and scale of wages and the state of institutional development of the country. Obviously, there has been a considerable slippage in the implementation of the labour laws. This gap has also contributed to the lack of strong trade union movement and effective labour administration. It is not wrong to maintain that while in West industrialisation has preceded labour legislation, in India converse is true. Labour legislation has preceded industrialisation. In the process the rights of employers and the obligations of workers have become confused.

Industrial relations commission

It is paradoxical that legislation itself has encouraged mushrooming of trade unions and, occasionally, contained the seeds of industrial strife. Take for example the Trade Unions Act, under which any seven persons can register as a trade union. It's provisions are openly used by rival leaders to hoist their own unions on the management. It is not uncommon to come across 37 unions functioning in an establishment employing 1700 workers. Industrial relations are bound to remain unsettled under such circumstances. It is a pity that even after 56 years of its existence the damage the Trade Unions Act has done has not been recognised and no serious attempts have been made to take corrective measures. One can only hope that the current thinking of Government on the constitution of Industrial Relations Commission would be given a concrete shape and steps will be taken to bring order in the chaotic trade union terrain. Let us accept that unless trade unions operating in a unit are contained and definitive guidelines are laid down for the determination of representative union and bargaining agent, there cannot be industrial harmony, howsoever pious and suave our resolutions might be.

There is need for a new Industrial Relations Act. The view generally shared is that the present Industrial Disputes Act has not only failed in preventing strife but some of its provisions have been used to upset negotiated settlements and thereby, frustrate the growth of collective bargaining. Even though there are penal provisions with regard to illegal strikes, they are seldom invoked. There is hardly any instance where workers going on illegal strike have been punished. Instances are aplenty where minority unions have unilaterally terminated the agreements between management and representative unions duly authenticated by the government machinery. Even an exemplary legislation like the Bombay Industrial Relations Act has not stopped the up-start trade union leaders to bring the wheels of production to a stop. The long drawn strike in Bombay textile industry is one such example.

The employers' grudge

The employing community have often lamented the way authorities themselves become a party to the violation of the provisions of the statute. Take for instance the payment of Bonus Act which spells out a formula for determining the quantum of bonus payable, with a floor and a ceiling. This is not the place to go into the merits or demerits of the legislation. But it needs to be emphasised that once the law has been made operative the payment of bonus should strictly be in accordance with its provisions. Yet, after the bonus percentage is arrived at the industrialists are pressurised by authorities to concede extra payment outside the pale of the Bonus Act. The managements are helpless in such situations. If in one State such ex-gratia payments are conceded, there is no reason why similar unreasonable demands are not voiced by workers and get the support from authorities in other States. Of course, the Central Government have advised the States to strictly follow the provisions of the Bonus Act. But the situation still remains unsettled and leads to industrial unrest.

This, however, does not imply that there is no need for legislative prescriptions. The issue is, if a legal frame-work is necessary, what is the basic form in which the employer-employee relations or labour-management relations should be regulated. Here, it should be kept in mind that any arrangement, legislative or otherwise, for industrial relations will deal only with a very small percentage of the total work force, and bulk of the labour will be left to its own ways and means. Perhaps, too much pre-occupation with the organised sector has created a privileged class of workers which, in relentless pursuit of its own sectional interest, has totally ignored the claims of bulk of the population on the results of industrial operations. This situation made the Prime Minister to exclaim that 'in India being employed itself is a privilege'. The consumer interests have suffered a great deal on account of the inward looking behaviour patterns of this organised class totalling 22 million workers out of a labour force of 250 million in a population of 700 million.

A steady decline in commitment

In the context of the developmental needs of the country the freedom of Association and Right to Organise needs to be examined. Being deeply committed to democracy the Constitution of India has guaranteed this fundamental right. There are three Conventions and equal number of Recommendations or the International Labour Organisation on the subject. It is a brilliant testimony to democratic ethos that in India we have not only respected the fundamental right of freedom of Association and Right to Organise but positive steps have been taken for promoting it through legislation and tripartite consultations. Bipartism has been encouraged. It has grown.

But of late there are signs of gradual and steady decline in our commitment to those values which sustain and inspires democratic principles. There does not appear to be enough recognition of the obligations that are concomitant on freedom and egalitarianism. It is now felt that the International Labour Organisation as also the Government of India have adopted enough instruments and enacted a number of laws which lay down the rights of workers and the obligations of employers. It is time that the duties of workers are clearly expressed and made deeply ingrained in our work culture. Further, in evolving any legal frame-work for industrial relations, the emphasis should be on making laws simple and understandable to all those who stand to benefit or are governed by them. The definitions of various terms should be simple. The objective of the legislation should be to encourage the formation and growth of strong organisations of workers and employers with a stimulus for their upward integration into strong federations. The law must also provide a sound system for the identification of collective bargaining agent, along with the identification and determination of bargaining levels.

Laws should be enforced

Finally, laws should be strictly enforced and any breach of it should attract penalty. Legislations like Industrial Disputes Act and Trade Unions Act should be replaced by Industrial Relations Commissions as recommended by the National Commission on Labour. Collective bargaining should be encouraged and clear norms should be established for the determination of bargaining agent. That will help weed out undesirable trade unions and their leadership. A fresh thought should be given to the formulation of wage policy that attempts to harmonise the claims of the workmen with that of the demands of national development on the industrial product. Trade union movement should be gradually wheeled away from political parties and any attempt at the politicisation of the unions should be discouraged. In future dispensation of industrial relations, tripartism and bipartism should play an increasingly influential role. These alone will promote participative involvement and arrangements. Managements should pay better attention to the development of human resources in their undertakings. Gone are the days when a workman could be treated as a commodity. He is not only a factor of production, but is the very centre of all industrial activity. A contented and committed worker is the best asset that a management could have, and he is he strongest foundation for the creation of healthy and harmonious industrial relations system. ☐

Panel of Economists for Planning Commission constituted

THE Government of India (Planning Commission) has constituted a panel of Economists with knowledge and experience of the problems of different States and Regions to advise the Planning Commission on the formulation of the National Plan and assessment of Plan performance. The twenty-two member panel will also consider specific issues relating to development and planning of different States and Regions.

The Panel set up with immediate effect will consist of the following members :—

Dr. Kanta Ahuja, Department of Economics, Rajasthan University; Dr. I. Z. Bhatty, Director General, National Council of Applied Economic Research ; Dr. P. F. Brahmananda, Professor of Economics, University of Bombay ; Dr. Boudhyan Chattopadhyay, Director, Cressida, Calcutta; Dr. P. C. Goswami, Professor and Head, Deptt. of Agricultural Economics, Assam Agricultural University, Jorhat ; Dr. P. C. Joshi, Director, Institute of Economic Growth, Delhi ; Dr. Waheeduddin Khan, Director, Centre for Economic & Social Studies, Hyderabad; Dr. C. T. Kurien, Director, Madras Institute of Development Studies, Madras ; Dr. D. T. Lakdawala, Sardar Patel Institute of Economic & Social Research, Ahmedabad; Prof. S. C. Minocha, Deptt. of Economics, Bhopal University; Prof. Baidyanath Mishra, Vice-Chancellor, Orissa University of Agriculture & Technology, Bhubaneshwar; Dr. D. P. Nanjundappa, Vice-chancellor, Dharwar University Prof. K. A. Naqvi, Delhi School of Economics; Dr. T. S. Papola, Director, Giri Institute of Development Studies, Lucknow; Prof. G. Parthasarthy, Department of Economics & Applied Economics and Cooperation, Andhra Pradesh University, Waltair; Dr. I. G. Patel, Director, Indian Institute of Management, Ahmedabad, Prof. Pradhan; U. Prasad, A. N. Sinha Institute of Social Studies, Patna; Prof. Institute for Social & Economic Change, Bangalore; Dr. N. Rath, Director, Gokhale Institute of Politics & Economics, Pune; Dr. H. K. Manmohan Singh, Professor, Department of Economics, Punjabi University, Patiala; Dr. A. Vaidyanathan, Centre for Development Studies, Trivandrum and Dr. Pravin Visaria, Sardar Patel Institute of Economics and Social Research, Ahmedabad.

The Panel will normally meet twice a year.

Are trade unions really responsible ?

The wage conflict is fundamental between labour and capital says the author, and adds "the unrest is therefore natural in view of the existing wage policy being pursued and the labour policy being geared to buttress that policy. It is also a truism and a fact of life and experience that without unrest or strike struggles or at least strike threat no demands are settled".

T. N. SIDDHANTA, SECRETARY, AITUC

WHILE discussing labour unrest there is a tendency to highlight mainly and often exaggerate the mandays losses due to strike; the substantial mandays lost every year on account of lock-outs with intensity varying from state to state and from industry to industry is generally sought to be underplayed. During the Emergency in 1976, out of total mandays losses due to work-stoppages, lock-outs accounted for as much as 78 per cent. Even in 1978, after the Emergency, lock-outs accounted for more than 45 per cent of the total mandays losses. In states like West Bengal, incidence of lock-outs and mandays losses on this account often far outstrips that for strikes.

Besides, while discussing labour unrest, work-stoppages etc. no one cares to compare the mandays lost with the total mandays worked in a unit or industry as the case may be. Even in 1979 which recorded the biggest time loss in the seventies—44 million mandays, the time loss was only 2 per cent of the total mandays worked in factories in that year and the percentage would be even less if losses outside factory establishments are included.

There is no denying the fact that in the recent period the industrial relations situation in the country has deteriorated and a situation of confrontation between labour and Government has developed as a result of a series of events.

The Bombay strike

The longdrawn strike of Bombay textile workers which has already completed fourteen months has laid bare the basic malaise from which the industrial relations system in this country continues to suffer. The strike which commenced on January 18, 1982 acquired distinction not only because of its long duration, being the longest strike in the history of strike struggles in this country, but also because of the unity and determination displayed by the workers facing all hardships and sufferings and baffling every calculation of the Government, the millowners and perhaps many a trade union. The Parliament was told recently that loss of production on account of the strike up to January 31, 1983 amounted to 1,083 million metres of cloth besides loss of exports etc. And this happened in the year of Productivity. It only shows how scant is the concern for production of the Government and the overriding concern that was evident was to somehow defeat the strike.

Without trying to appreciate the depth of discontent amongst the workers accumulated for years in the question of wages, bonus, DA etc. and the failure of the recognised INTUC union in this regard, the Government from the beginning tried to politicise the strike and refused to intervene for a negotiated settlement, and the strike rolled on month after month. Is it not unbecoming of a responsible Government to remain absolutely callous in the matter of intervening for a negotiated settlement? The main aim of all moves so far on the part of the Government and the millowners, has been to find ways and means to rehabilitate the discredited INTUC Union which has undoubtedly been totally rejected by the workers en masse. The millowners also are trying to make the best of the situation by extracting more and more concession and reliefs.

Union membership verification

The so-called representative union was foisted on the workers by virtue of the undemocratic VIR Act for the last about four decades, and not as a result of democratic choice of the workers. The continued huge loss of production or the sufferings of such a large number of workers with their families do not seem to be of as much concern for the Government as the propping up of the INTUC Union and to keep it afloat in the service of millowners and along with it the infamous BIR Act and its undemocratic method of determining representative union. The Bombay textile strike has also demonstrated and perhaps nothing else could have done so thoroughly, the utter hollowness of the method of verification of membership rolls for the purpose of determining the representative Union. But the Government does not seem to be inclined to draw any lesson from the strike and continues to stubbornly resist the method of secret ballot which is the only democratic method available, so that workers can express their free choice. And if from a village Panchayat member right up to the President of the Republic can be elected by secret ballot it defies reason why the workers will be denied the democratic right to choose their representative union for the purpose of collective bargaining.

The industrial relations situation will be spared of many irritations if this elementary democratic procedure is accepted. An influential section of employers also veered round this method some time ago in the light of their own experiences on the ineffectiveness of unions foisted from above.

Curbs on trade union rights

The trade unions have time and again expressed concern at the policy being increasingly pursued by the Government for the last few years, a policy of confrontation with organised labour, instead of consultation and dialogue which alone can create the proper climate for healthy industrial relations situation. The systematic attempt to put curbs of all kinds on the trade union rights and functioning of trade unions in order to contain what is called collective trade union power, will perpetuate industrial unrest which will inevitably find expression in various forms. The Janata Government also tried and brought forward the comprehensive Industrial Relations Bill in 1978 which was rejected by the entire trade union movement, the INTUC inclusive, as anti-worker and anti-trade union. The basic approach of the present government is not different and in fact, the same approach is being pursued perhaps more vigorously. During the last three years Labour has been under continuous attacks—its right of collective bargaining, right of strike, right of forming and functioning of trade unions have all been the target of governmental attacks. The Chambers of Commerce and employers' organisations have also been persistently demanding stringent steps against trade union rights.

It is significant that precisely during this period when Labour's rights and benefits are the target of continuous onslaughts, when more and more controls are sought to be imposed on the trade unions, that all controls and regulations on Industry and Trade were being gradually liberalised, increasing concessions and incentives were being given to them to create what is called conducive climate for industrial investment and so on.

Attack on collective bargaining came to fore in connection with the strike of 125,000 workers of the Bangalore-based public sector undertakings which lasted from the end of December 1980 to the first quarter of 1981. During the course of this strike, on February 1, 1981 the Ordinance on LIC employees was promulgated empowering the government to unilaterally determine the service conditions of LIC employees and thus depriving them of the right of collective bargaining. Even the statutory agreement of 1974 concluded with the approval of the government was sought to be subverted in respect of bonus and DA. Earlier, by means of a Government notification, the right of collective bargaining of GIC employees was nullified. The trade unions registered their protest against such anti-labour measures, and tried to point out that such measures will act as permament provocation to industrial unrest, but the government was not in a mood to pay any heed to such plea.

"ESMA, a Damocles' sword"

Then again in July 1981, precisely when mandays losses on account of strike had sharply declined, the Essential Services Maintenance Ordinance (ESMO) was promulgated empowering the government to prohibit strike in so-called essential services whose list the government will have discretion to enlarge at will. And the Bill in Parliament was sponsored and piloted surprisingly not by the Labour Minister, but by the Home Minister, as if it is not an industrial relations question, but a law and order question. It, of course, betrays a kind of approach and attitude. Earlier, in 1980, the National Security Act was put in the statute book which is also being used against trade unions despite official assurances that it would not be used to suppress trade union movement.

The Act has since been amended to bring sixteen industries under its purview. By enacting the ESMA the Government took one more step towards confrontation with Labour. The right of strike will thus be at the mercy of ESMA which will be hanging as Damocles' Sword over the head of the workers as a permanent threat. The right of strike is fundamental to collective bargaining and without this right collective bargaining will be reduced to a farce. In this situation it is idle to blame the workers if they put up resistance against the continuous encroachments into their rights and the protest took the form of a countrywide industrial general strike, the first of its kind in this country, on January 19, 1982, on a 13-point demands, including the demand for the repeal of ESMA.

The Government was relentless and continued unabated its offensive. At the fag end of the budget session in 1982, a spate of amendment Bills were introduced in Parliament relating, in particular, to the Industrial Disputes Act and the Trade Unions Act and a new Bill covering employees of hospitals, educational institutions etc. following the footsteps of the Janata Government, was also introduced. The Government did not care to hold consultations with the trade unions before proposing the amendments which have been lifted almost bodily from the infamous IR Bill of 1978 sponsored by the Janata Government. The Supreme Court verdict of February 1978 expanding the definition of "Industry", has been flouted and the separate Bill prohibiting strike, prescribing compulsory arbitration and so on, was introduced.

The Industrial Disputes Act

Out of these amendment Bills, the one related to the Industrial Disputes Act has already been pushed through the Parliament on August 9 last year. The other two are still pending.

These amendment Bills have been decried by the overwhelming majority of trade union organisations as they seek to impose increasingly stringent restrictions on the trade union, its functioning and activities as a democratic mass organisation. Unions, their office-bearers are threatened with punitive measures, even cancellation of registration in the name of unfair labour practice and on the plea of participation in so-called illegal strike and powers of officialdom are sought to be widened to enable it to interfere into the internal affairs of trade unions. Meanwhile a National Labour Conference was convened on September 17 and 18, 1982. It is also significant to note that while the central trade union organisations were informed of the Labour Conference telegraphically on July 13, the Industrial Disputes (Amendment) Bill was rushed through the Lok Sabha on August 9. But the Government refused to keep the Bill pending till the Labour Conference has an opportunity to discuss the amendments proposed, although in all fairness the Government should have agreed. The majority of Central trade union organisations in the circumstances decided to boycott the conference as according to them, no useful purpose would have served by their participation in view of, particularly, the closed mind of the Government. The truncated National Labour Conference dominated by the employers and INTUC leadership, and the sub-committee formed by it, put forth more reactionary and anti-worker proposals by way of further amendments to the Industrial Disputes Act and the Trade Unions Act. It was reported that all decisions were taken with complete unanimity !

In terms of these amendments, further restrictions are proposed to be imposed on the right of strike leaving hardly any scope for any legal strike in this country. Even the right of members of a trade union to elect office-bearers of their choice will be curbed. In addition to the long list of so-called unfair labour practices, the so-called Code of Conduct evolved by the conference is designed to impose more restrictions on the activities of trade unions and their members.

Government not responsive

All these exercises aim at the legislative, judicial and administrative control of trade unions and all their activities in defence of workers' interests. The employers will be the happiest as the employers' organisations have been demanding for long for effective measures to suppress trade unions and trade union power. It goes without saying, these measures will only exacerbate industrial relations in this country, and provoke labour unrest. The government has also departed from the time honoured practice of putting up before the Indian Labour Conference (ILC) any proposed legislation or amendment to any existing labour law for discussion.

This practice was followed since the inception of the tripartite system at the national level during British days. Since sometime this healthy practice has been abandoned and the Government has chosen to act unilaterally and even in disregard of the opinion of the trade unions. The representatives of central trade unions who boycotted the national labour conference urged the Labour Minister when they met him on February 3, to "start with a clean slate" and that the trade unions are prepared to enter into dialogue and discussions to evolve a better industrial relations system, but with no positive response. If the Government shows any positive attitude trade unions do respond and do not hesitate to do so. For example, the central trade unions promptly called off the strike in public sector undertakings scheduled to take place on January 28 this year soon after the Finance Minister agreed to set up a committee "to recommend an appropriate upward rise in the rate of DA to the workers in the Central Public Sector undertakings." But the Government is dragging feet and even after two months no committee as agreed upon and promised has yet been set up. Can one blame the workers if they lose faith in seriousness of the Government ?

Erosion of real wages

Amongst the major causes of labour unrest are the wages and bonus which between them account for about 40 per cent of industrial disputes. Government being the largest employer, has been following a policy of wage-restraint, if not of wage freeze. The attack on the right of collective bargaining and the broad-sides of a political-ideological nature of the question of so-called "high wage islands" directed against the organised workers is basically aimed at that. In fact, the freeze, if not wage cut, is already in operation. The rate of Dearness Allowance for workers of public sector undertakings has been freezed at Rs. 1.30 per point which is a part of the guidelines of the Bureau of Public Enterprises (BPE) against which the strike was scheduled to take place on January 28 last. The Government now admits that there is "erosion of real wages of workers of Public Sector undertakings because the present rate of DA at Rs. 1.30 per point rise in the CPI does not fully neutralise the rise in the cost of living even at the lowest level of wages . . . ." The erosion of real wages is not confined to the workers of Public Sector undertakings but on all workers having sliding scale DA not only in respect of the rate of DA per point of rise of CPI, but also due to defects in the compilation of the indices themselves. The Rath Committee Report (1977) has shown what was established during the sixties by expert Committees that the index numbers with 1960 base which is currently in force, on various counts are defective and they underestimate the price rise. But the Government has refused to rectify the defects and the workers are thus doubly penalised inasmuch as full neutralisation is denied and on the other hand, a defective price index series have been kept in force.

Despite profuse concern expressed in season and out of season by the powers-that-be and the big employers for the unorganised workers, the needbased norm of minimum wages unanimously agreed upon at the 15th Indian Labour Conference in 1957 has been systematically downgraded and its content reduced to what is called the povertyline wage level. Even the minimum wages fixed by the Government, both at the state and Central levels, for different industries and occupations covered by the Minimum Wages Act are in most cases yet to reach the poverty line level in terms of the prescription of the Planning Commission, apart from the question of implementation of whatever wages are statutorily fixed.

The concept of 'poverty line' wage has been evolved not for the purpose of raising those below poverty line above the line, but to freeze the demand of workers in the organised sector for wage rise on fictitious plea.

The "high-wage islands"

Despite talks of "high wage islands" by the Government the mass media and the big business, it has now been fairly well established from various published studies by the various Governmental agencies that Indian workers even of the organised sectors are denied their due in terms of share of wages in total factor payments, level of real wages, share of wages in value added etc. and the shares show distinct declining trends, whereas the shares of profits, dividend and interest earners show increasing trends. It is also a canard often spread that the Industrial workers are appropriating larger share of the national income and

(*Continued on page* 17)

New forest policy aims at generating rural employment

The National Committee on Environmental Planning has recommended a new forest policy which gives thrust to the generation of employment for rural and tribal population and rapid increase in forest cover including grass cover on denuded lands unfit for permanent agriculture.

THE new Forest Policy recommended by the National Committee on Environmental Planning (NCEP) gives thrust to the generation of employment for rural and tribal population and rapid increase in forest cover including grass cover on denuded lands unfit for permanent agriculture.

Keeping in view the need for evolution of a conservation strategy that recognises resources limitations and ensures maintenance of life support systems for present and future generations, the NCEP has recommended the following major objectives in the new Policy :—

Proportion of area under tree cover

A rapid increase in forest cover through protection of all existing forest eco-systems, the creation of tree cover and grass cover on all degraded and denuded lands which are not fit for permanent agriculture, besides generation of employment for the unemployed and under-employed rural and tribal people and the derivation of long-term economic benefits through well-managed resources.

Forest management programme should rest on multiple functions and multi-dimensional uses including conservation of environment, protection of existing forest eco-systems, conservation of flora and fauna, development of selected forest areas for educational and recreational purposes, grazing facilities for the large livestock and protection of interests of tribals in the profits of trade and industry based on Minor Forest Produce (MFP) etc.

Proportion of area under tree cover

Highest priority must be given to stopping any further reduction in tree cover both by protecting existing forests from destruction and provision of alternative sources for fuel, fodder and timber needs of the people and requirements of forest-based industries. Diversion of forest lands to non-forest purposes should be done after careful examination by competent authorities keeping in view social and environment costs and benefits and should automatically include funds as a part of the project cost to provide for compensatory afforestation.

Management of all existing forests should be regulated for maintenance of basic environmental functions. A minimum tree density should be maintained with constant monitoring of regeneration growth and mortality of the tree crop, besides periodically undertaking integrated and comprehensive forestry, hydrological, soil, botanical, geological and zoological surveys. Clear-felling of natural forests and their replacement by monocultural plantations of quick-growing species by State Forest Departments and State Forest Development Corporations should be avoided.

Monitoring of working forests to maintain ecological balance and overall conservation of environment should be ensured by a central agency and financial incentives provided to local populations to preserve and enhance forest cover including encouragement to formation of forest labourers' cooperatives and forest-based cottage and small-scale industries.

Shifting cultivation should be eradicated through a cooperative effort and introduction of alternative programmes including integrated programmes of agriculture, horticulture, animal husbandry and forestry suitably harmonised with proper land use practices.

Resources for forest industries

Forest-based industries—big or small—should be permitted only after a rigorous scrutiny by a central agency with special reference to environmental consequences. Such forest-based industries should be encouraged to obtain their own supplies at market prices —to stimulate plantations of quick growing trees on degraded lands. Pressure on forest resource base should be reduced through more efficient management like developing new uses of weeds like Lantana, Eupatorium, Parthenium and water hyacinth, locate alternatives|substitutes in other resource areas, recycle used products etc. Use of alterantive energy sources such as Kerosene, L.P.G. and biogas and adoption of the efficient and smokeless 'chulhas' is particularly significant here.

The combined resources of Central and State Governments should be utilised to halt further regularisation of existing encroachments and prevent invasion of forest lands. A modern system of fire watching and organised fire fighting should be evolved for protection from forest fires.

Special efforts should be made for forestry education, extension and research.

Career planning

Career Planning should be done for officers in Forest management to specialise in specific fields like preparation of working plans, social forestry, project planning and implementation, forestry legislation, forestry ecology and conservation, logging and fodder cultivation etc.

Local and Tribal populations should be associated with forestry operations like silviculture, management, extraction and utilisation of forest produce as well as in forest-based industries.

The objectives of the proposed Forest Policy cannot be met without adequate finances if areas measuring tens of millions of hectares are to be placed under permanent vegetal cover, if further degradation of country's basic natural resources is to be halted and its economy is to be regenerated.

Improved logging tools and techniques should be introduced to improve the efficiency of extraction and minimise damage to rest of the forest stock during extraction.

Development of communications

Road and communication network (including that for defence purposes) in the natural forest areas of the country should be planned with utmost care. All forests in ecologically sensitive areas should be allowed to remain inaccessible construction of roads should be undertaken only after adequate geological and geomorphological investigations besides precautions regarding soil erosion and landslides.

Export of wood-based forest produce should be completely banned. Clearance for the export of minor forest products should be given only after ensuring that this will not threaten their survival.

Improved data base

Early steps should be taken to improve the existing methods for regular collection, collation and publication of reliable data regarding all aspects of forestry management.

The vital and permanent needs of the country for such a Policy include the need for maintenance of environmental stability and preservation of existing natural forests; checking denudation and soil erosion in the catchment areas of rivers, prevention of floods and droughts and control of premature siltation of costly reservoirs; checking erosion along treeless banks of rivers, in the hot and cold deserts of Thar and Ladakh and their environs, on large stretches of waste lands in the hilly and drier parts, on areas denuded of vegetation by shifting cultivation and on barren sea shores; generation of productive employment for the unemployed and underemployed in the rural sector in programmes of afforestation of degraded lands and generating forest-based employment for rural artisans; meeting requirements of fuelwood, fodder, minor forest produce and small timber for the rural and tribal population through afforestation of all denuded and degraded lands; eliminating the pressure of industry on natural forests through afforestation; provision of amenities for recreation and conservation education in urban and rural environments; and the need for creating a people's movement for achieving these objectives.

Depletion of forest resources

No more than 12 per cent of the country's land surface or less than half of the 75 million hectares classed as forest lands in revenue records, is actually under adequate tree cover. While deforestation is taking place at the rate of at least one million hectares, new plantations do not account for more than .5 million hecatres per annum. 13 million hectares classed as 'permanent pastures' are in fact generally without any vegetation on account of either overgrazing or encroachments. Another 40 million hectares of non-forest lands are classified as either 'fallows' or 'cultivable wastes' and lack vegetal cover. The National Forest Policy, enunciated in 1952, on the other hand, advocates the maintenance of 60 per cent of the area in hilly tracts and 20 per cent of the area in the plains—or 1|3rd of the entire geographical area of our country—under forest cover.

Some major reasons behind the depletion of our forest resources are:

- low priority for preservation of tree cover and utilisation of forest lands for settling the landless and construction of dams and mines etc;
- inadequate allocation of financial and managerial resources for afforestation and effective replenishment of fast dwindling forest resources;
- establishment of forest-based industries without due regard to viability of the resource base;
- Government's tendency to look upon forests as a revenue-generating sector and consequent pressures to maximise extraction even against technical advice.
- Insufficient forest department staff and technical equipment to practise scientific extraction methods and prevent excessive felling by forest contractors and damage by forest fires.
- replacement, in many re-forestation programmes, of degraded natural mixed forests with mono-cultural plantations.
- failure to involve tribal and local communities in preservation and augmentation of forest resources.
- intense human pressures on forests for grazing, fuel and timber.
- absence of a reliable system for the collection and reporting of accurate data on forest resources.
- piecemeal approaches to the formulation and execution of various development projects, taking little account of the impact of such projects on forest resource base. □

A Mahout gets an elephant for the asking

To create mass awareness Kerala celebrated February as Integrated Rural Development Month. A mahout who lost his job due to Land Reforms Acts was given an elephant so that he could work in the forest.

E. VASU

PROBLEMS of unemployment and poverty are the most ticklish that have been facing our country. The incidence of these problems is the greatest in our rural areas.

Ever since we achieved independence a programme of socio-economic development of the country was launched by the Government through the successive Five Year Plans. These plans have, no doubt, brought about considerable progress in various sectors of our economy but the fruits of progress seem to have bypassed the rural poor. 48 per cent of our population is still below the poverty line and general impression is that despite the overall progress achieved over the years, the rich have become richer and the poor poorer.

The importance of planning from the grassroots level has however, been well recognised by our planners and others. They have now underlined the need of studying and planning the programmes of rural development and especially those intended for the benefit of the rural poor by formulating block plans and District plans.

The programme of Integrated Rural Development is meant for the rural poor and the target groups include the small and marginal farmers, the landless labourers, the Village artisans and the scheduled casts and the Scheduled tribes. The intention is to help all these poor to cross the poverty line by taking up schemes suited to the needs and requirements of a family. These schemes are financed with subsidies given by the government and loan raised with the help of institutional finance. These schemes should be capable of generating sufficient income on a sustained basis to help to raise the standard of living of the family and to enable it to repay loans taken from the banks within the period of time.

A programme with a difference

It may be noted that programmes for certain target groups like the small and marginal farmers and the agricultural labourers like the S.F.D.As and M.F.A.L. were launched by Government earlier. But the programme of IRDP is distinct from the earlier efforts made in improving the lot of certain sections of the poor. While the earlier programmes were aimed at achieving certain physical targets over a certain time the programme of IRDP is family oriented and intended to improve the lot of the selected families with reference to its present status—the aptitute and educational level of its members, their traditional occupation, if any. As per the earlier schemes people came to Government for assistance whereas under IRDP the Block functionaries are supposed to approach the needy families, study their felt needs and prepare schemes best suited to effect improvements to their economic conditions. Under the programmes a subsidy of 25 per cent is given to small farmers. Marginal farmers, landless labourers, Village artisans and the members of Scheduled Castes are assisted upto 3-1/3 per cent whereas the scheduled tribes get 50 per cent by way of subsidy. All selected families are eligible for a maximum subsidy amount of Rs. 3,000 and balance is raised by way of loan from the banks in the co-operative and commercial sector.

The approach under the programme is to enable the selected families earn substantial additional income. For this purpose a basic survey has to be made and plans are to be drawn up and the selected families have to be properly guided and assisted till they really come out successfully in their venture.

The programme launched in the country in 1978-79 had introduced the schemes in 588 Blocks that year. On a policy decision taken by the government of India the centrally sponsored scheme of IRDP has been introduced in all the Blocks of the country with effect from 2nd October 80. In Kerala therefore all the 144 Blocks stand connected under this programme with an allotment of Rs. 5 lakhs each. A minimum of 600 families in each Block are required to be assisted under the programme during the current year and in all the 144 Blocks and a total number of four to five lakh families will get the benefit of the scheme during the 6th plan period.

In Kerala, the month of February 1983 was celebrated as Integrated Rural Development Month to create a mass upsurge and the target for the month alone was to help 50,000 rural poor find opportunities for jobs by utilising the assistance given. According to Sri. C.V. Padmarajan, Minister for Community Development, this endeavour is capable of generating tremendous enthusiasm on an all-India-level as Kerala could find out novel avenues for self-employment due to the high standard of literacy and acute unemployment among the youth. A mahout was given an elephant to work in forest. One of the 'Theyyam' (a folk art of Malabar) artistes equipped himself with the necessary paraphernalia during the last Asiad at Delhi, thanks to the assistance from the IRDP Scheme ! ☐

Splits in the Straitjacket

PEOPLE should retire at 65. When Bismark said this a century ago, he was setting an elusive and distant goal—a retirement dream for the working man of the time. Now when the dream has come true for most people in advanced countries, many of them grumble. Some say that 65 is too late to stop working, while others hold that it's far too early.

Looking into the problem an ILO report (Transition between work and retirement ILO, Geneva, 1982) suggests that a mandatory retirement age has become a sraitjacket that is bursting its seams under social, economic and demographic pressures. As a consequence, ageing workers today have a greater choice of retiring early than a generation ago and flexibility has become the watchword of our time.

Options

One breakthrough is that some workers can now claim their pension benefits up to five years before reaching the normal retirement age. They can do so even if their working capacity is not affected and their jobs not threatened by invoking personal reasons and, of course, accepting reduced pensions of some five to seven percent a year. Such an option is open, for instance, to workers in Belgium, Greece, France, Spain, Sweden and the United States.

Another approach constitutes the so-called length-of service pensions by which people become eligible to draw full benefits after having contributed to a pension fund for a specified stretch of time—between 20 and 45 years. This possibility exists in Austria, Brazil, France, Italy, Yugoslavia and several other countries. The concept of earlier retirement provided for people engaged in arduous and dangerous jobs, such as miners, seafarers and railway workers, has been broadened to encompass any person who is unfit to continue his occupation. Pacesetters here include Denmark, France, the Federal Republic of Germany, Norway and Turkey.

Moreover, ageing workers in such countries as Austria, the Federal Republic of Germany, Italy, Mexico, Sweden and Uruguary now have the possibility of drawing old-age pensions if they have been on the dole for a long time and if they cannot find a job. Perhaps the latest twist in flexible retirement policies are arrangements enabling workers to bow out of the workforce gradually. In Norway, for instance, workers over 60 years can take an additional paid leave. In Sweden, a special "partial pension" may be claimed by any worker from the age of 60 who has been transferred to part-time work.

Apart from these statutory measures, some collective agreements concluded, for example in France, the Federal Republic of Germany and the United States, have introduced income support schemes for workers who opt for early retirement.

Moving retirement age upward is also possible particularly in those countries where the labour force is ageing rapidly, such as Czechoslovakia, Denmark, France, Israel, Japan, Norway, Turkey, the United Kingdom, USSR and the United States.

In all these countries legislation authorises the deferment of pension payment and provides for the benefit to be increased in proportion to the number of years put off. The increases are often made at a favourable rate when the country encourages workers to participate in the productive labour force as long as possible. In some states the postponement is unlimited, whereas in others an age limit is set usually at around 70 years.

Caveat

Old age should have its dignity and its rest. So early retirement of workers who have been engaged in arduous or unhealthy employment or those who have long length of service, or who are unemployable for various reasons is socially desirable, and social security should extend effective protection of such elderly persons, the report says.

It adds a caveat, however, that "a statutory decision to reduce the pensionable age for everyone is potentially dangerous because it may not be reversible and the pension scheme would have to face serious financial difficulties which would lead to greater economic and social tensions."

The implication is that all people who wish to go on working and who are capable of working should be able to find and retain suitable employment.

The task ahead is, therefore, one of harmonising the aspirations of the individual with the needs of society so as to pave the way for a genuine retirement a la carte and facilitate the transition from active life to retirement. A distant, elusive goal indeed in these hard times of record-high unemployment and economic slump. Nonetheless, the seams of the straitjacket are splitting already.

(ILO)

2.23 Million hectares under Irrigation

AN irrigation potential of 2.23 million hectares is estimated to have been created in 1982-83 against a target of 2.34 million hectares. This was stated by Shri Ram Niwas Mirdha, Union Minister for Irrigation in a written reply to a question by Shri J. K. Jain in the Rajya Sabha recently.

The Minister also informed the House that all the State Governments have been advised to allocate maximum possible funds for the on-going irrigation projects in order to achieve the benefits with the least possible delay. Quarterly progress reports are also being obtained from them. These measures have been taken to augment the irrigation potential in the country as envisaged in the revised 20-point programme.

Promise and performance of Tribal development agencies

Integrated tribal development agencies have been established in many states for the overall economic uplift of the tribals living in scheduled villages ITDA scheme involves other agencies also such as Forests, Education Departments and Electricity Board and Animal husbandary Department.

CH. BHAGWAN RAO

THE development of Scheduled tribes has been receiving increasing importance since the beginning of the planning era. Special efforts have been made in various five year plans and a large number of schemes have been devised. However, when it comes to implementation of these schemes it has resulted in a large number of agencies meant for tribal development. In the light of this experience, it was felt that the development of tribals should have an integrated approach. Accordingly as part of the new integrated strategy, various state governments have prepared integrated tribal development plans and established integrated tribal development agencies for carrying out the plans.

As a part of the above overall national strategy the ITDA Warangal, was registered under societies registration act on 5th March, 1975 with the District Collector as chairman and the project officer as the chief executive.

Coverage of ITDA, Warangal

The project area of 3,122,46 Sq. Km constitutes 24 per cent of the total geographical area of the district. So far 32,640 tribals i.e. 75.40 per cent of the district tribal population are covered by the project. Incidently the project covers 29.31 per cent of the total population of the project area.

In terms of villages, the ITDA Warangal project area includes 285 scheduled and non-scheduled villages of the district in the blocks of Eturunagaram, Mulug, Gudur, Mahabubadad, Chityal and Narsampet of the 285 villages, included in the project (85) are deserted villages (as per 1971 census).

The rational for the inclusion of these villages in the project areas is either they are scheduled villages (22) or even if they are non-scheduled villages they are in the tribal development block area. The other important reason for their inclusion was that protected regulations were operating in scheduled villages and also the economic activity is carried out mostly in the form of agriculture in the villages.

Nature of Tribal population

The total population of the Warangal district was 18,70,933 (as per 1971 census) of which 45,287 persons belong to scheduled tribes (2.3 per cent). Of the total population Koyas formed the single largest tribe by accounting for 41,959 persons and Chenchus numbered 698. The population of other tribes is negligible, Bhils (16) Kolam (47) Pardhay (59) and Thoti (67). This tribal population is not spread throughout the district but is mainly concentrated in Mulug and Narsampet taluks with 31 per cent and 47 per cent of the total tribal population in the district living in these two taluks only. This concentration of target population makes the task of the development agency easy.

Schemes implemented by ITDA

To cater to the diverse of the tribal population in the covered villages the ITDA has devised and implemented various schemes. As many as 42 schemes have been implemented in the operations of ITDA from 1975-76 to 1980-81. However a closer look at the various schemes devised for tribals reveals that most of the schemes are agriculture-oriented. This orientation is justifiable in the light of the fact that, as it is the case for the entire country agriculture is the main occupation of tribals in the Warangal district also. As much as 90 per cent of the tribal population is engaged in agricultural operations for their livelihood, growing paddy, maize, jawar, pulses susamum and chillies as their principal food and non-food crops.

In the above context, any programme for the uplift of the downtrodden should aim at the exploitation of the natural resources and must be suited to the local needs and circumstances. Any plan for the tribal development also should be viewed according to this criteria.

The schemes undertaken by ITDA Warangal include land reclamation and development, supply of short term and long term agricultural inputs, supply of new types of HYV seeds, training in new methods of agriculture, introduction of horticulture in the tribal areas and supply of livestock etc.

The important schemes meant for the tribal welfare are : (i) maintenance of Hostels, (ii) establishment of Ashram schools and special schools (iii) special nutrition programmes (iv) midday meals and (v) sanction of scholarships, supply of books clothing etc. to tribal children.

The ITDA also undertakes certain schemes pertaining to industries, medical and health care. In view of the comprehensive nature of the schemes, the schemes meant for overall economic uplift of the tribals living in schedule villages also involve various other agencies of the Government such as Forests Department, Education Department, Electricity board and Animal Husbandary Department.

Scope for improvement

In the implementation of the various schemes mentioned above ITDA can improve upon its performance in the light of the few suggestions offered below to help future policy formulation :

1. There is no consistency in the type of developmental schemes taken up in the scheduled areas under agency. For instance, a particular scheme taken up in a particular area does not get funds in the next year for the follow up programme. This will result in half-hearted approach to the development of the tribal villages. Attainment of targets is one aspect and making the development effort reality when measured by its impact on the beneficiaries is another aspect.
2. As it is well known in the Indian context, taking up of the agricultural activities alone will not bring the tribals above the poverty line. Simultaneously educational programmes to increase the literacy and setting up of agro-industries to provide sustenance to a large number of tribal youths should be taken up.
3. Various agricultural schemes have been taken up such as application of fertilisers, supply of agricultural inputs and distribution of plough bullocks and buffaloes. It is pertinent to examine whether there is necessary institutional infrastructure for carrying on these programmes on viable basis over a sufficiently long period of time. For instance, applications of appropriate fertilisers requires oil testing facility, supply of agricultural inputs requires, maintanance and repair facilities. Plough bullock and buffaloes require veterinary hospitals and dispensaries. The entire focus is on the supply of inputs without sufficient infrastructural facilities and follow up.
4. Some of the schemes listed out earlier include schemes like raising of community nurseries, establishment of community orchards establishment of community gardens and setting up of units with plant protection equipment in tribal grama panchayats and co-operatives. In this connection it has been observed that whenever the schemes are taken up on collective basis meant for the entire community it was found that the idea did not catch up among the tribals however desirable it may be. Hence in the formulation of schemes. it should aim at individual tribals as far as possible except where it has to be intended for the community as a whole by the very nature of the scheme for example, schools, health centres, high yielding variety demonstrations etc.
5. Setting up some more agro-industrial units in tribal areas such as beedi manufacturing units, bamboo and mat weaving units may be examined in view of employment potential and reducing the dependence on the agriculture.
6. The integrated tribal development involves liaison between various government departments such as departments of education, co-operation, animal husbandary, agriculture, electricity board, forests in addition to other government agencies such as DRDA, SFDA, AP Scheduled tribes co-operative finance corporation etc. The ultimate impact of the schemes will depend upon the extent and effectiveness of the co-ordination between these agencies.

According to the existing arrangement to get the margin money from any of the corporations the ITDA will collect the applications from the tribals duly recommended by the V.D.O. and B.D.O. concerned, the ITDA in turn refers the cases to the concerned bank after due identification for the remaining percentage of loan. Thus, the ITDA has no direct role in the identificantion of suitable tribals on its own. And in some cases ITDA has to keep many properly identified cases in pending for want of clearance from concerned financial and commercial agencies.

7. The priorities of ITDA are as follows :
   - (i) Minor irrigation programmes
   - (ii) Land development programmes
   - (iii) Marketing and credit
   - (iv) Plantation
   - (v) Administration of educational schemes
   - (vi) Other than educational schemes.

The order of priorities and the programme of action as outline by ITDA reveals that the schemes which required larger amounts of funds and are beneficial in the long run are accorded top priority. The possibility of adding forest-based schemes with backward or forward linkage has to be examined especially in view of the fact that much of the forest area is covered in the project.

8 The schemes evolved by the ITDA should be clearly split into two categories
   - (i) Schemes meant for the tribals with certain piece of land and
   - (ii) Schemes meant for the tribals who do not own any land.

9 It is important in the implementation of the schemes that the starting of the new schemes should not be at the cost of an on-going scheme.

10. There is need to increase involvement of the departments of fisheries, roads, P.W.D. and R&B and women welfare departments in their respective spheres of activities in the area of operation of the ITDA.□

The strides and shortcomings of State Trading Corporation

Over the years State Trading Corporation of India has shown steady growth and has become the single largest export house of the country. But distribution of essential commodities has been, the author says, far froms atisfactory. He feels an objective review of STC's working is required.

PROF. D. V. SAHANI & PROF. R. N. GUPTA

CAME into being in 1956 with the sole aim to facilitate the Government to enter into bilateral trade agreements with East European countries, the State Trading Corporation of India Ltd. is now the single largest export house of the country.

Turnover

The following table highlights the turnover position of the Corporation :

(Rs. Crores)

Turnover	1979-80	1980-81	1981-82
Exports	642	450	555
Imports	1010	1315	1291
Domestic	9	15	21
Total	1661	1780	1867

Taking into consideration, STC's turnover of Rs. 9 crores in the year of its inception, it is clear that during 1981-82, the turnover of the Corporation registered an all-time record of Rs. 1867 crores. This increase was attributed to expansion in imports. Domestic trade ranged from Rs. 9 crores to Rs. 21 crores. Increase in STC's turnover owing to imports exceeding tremendously over exports and insignificant domestic trade can in no case be treated as a healthy sign.

Financial results

The Corporation has contributed Rs. 48.7 crores to the Government Exchequer in the form of dividends and taxes for 1981-82 as against Rs. 43.47 crore in the previous year. After transferring a sum of Rs. 22.69 crores to the General Reserve, the accumulated General Reserve of the Corporation has reached Rs. 98.17 crores as on 31 March 1982. During 1981-82, the equity capital of the Corporation has reached Rs. 15 crores from Rs.1 crore in the year of its inception. The pre-tax profit increased to Rs. 71.45 crores during 1981-82 as against Rs. 63.36 crores in the previous year.

Exports

Export sales of the Corporation at Rs. 555 crores for 1981-82 has significantly registered an increase of about 23 per cent as compared to Rs. 450 crores last year. This increase is attributed to increased supply of certain export items namely sugar, castor oil, tobacco, rice, jute goods, food products, finished leather and consumer products and favourable market conditions for other items such as construction materials, engineering products and chemicals and drugs.

Canalised export

Shellac|Seedlac| R.Lac. G. N. Extraction, opium, L. G. oil, castor oil, Semi-processed Leather, Sugar, Barley consitute canalised exports of the Corporation.

The canalised exports rose from Rs. 213 crores in 1980-81 to Rs. 231 crores in 1981-82 thereby registering an increase of 8.5 per cent over the previous year. Major increases were witnessed in respect of items such as sugar, castor oil, shellac and barley.

Non-Canalised exports

Non-canalised exports of the Corporation consist of tobacco, jute goods, rice, textiles and readymade garments, footwear and components, chemicals and drugs, consumer products, construction materials an engineering products.

In the export of non-canalised items, the performance of the Corporation has shown a marked improvement. Export of non-canalised items at Rs. 324 crores in 1981-82, recorded a significant increase of 37 per cent over Rs. 237 crores in 1980-81.

Export of non-canalised manufactured products at Rs. 132.35 crores in 1981-82 have registered a major increase of 37 per cent as compared to last year's level of exports of Rs. 94.43 crores. The share of manufactured products in non-canalised export was 41 per cent. Major increases were registered in respect of the following items :

(Rs. Crores)

Product	Exports 1981-82	Exports 1980-81	% Increase
Construction materials & Engineering Products	10.07	2.44	313
Drugs & Pharmaceuticals	4.00	1.32	203
Food products	9.40	5.25	79
Textile and Garments	23.26	15.06	54
Consumer Products and Army Software	11.66	8.39	39
Basic chemicals	10.14	8.18	24
Finished Leather	16.04	14.08	14
Footwear and Components	22.38	20.03	12

The Corporation's past efforts to explore markets for new items and to diversify the markets for old and new items are praiseworthy. Several new items were pumped into international market during the year 1981-82 and some of these were rayon viscose fabrics to U.S.A., textile fabrics and threads to Vietnam, green tea to Algeria and stereo music equipments to Hungary.

The Corporation developed several new areas for boosting exports during the year 1981-82. Among some of these new markets were Saudi Arabia and Malaysia for mango pulp. Hungary and G. D. R. for fashion garments, U.K. for golf shoe uppers, Spain for footballs and Uganda for bicycle and bicycle parts.

Imports

From imports worth Rs. 159.20 crores in the year of its inception, the Corporation reached an all-time record of Rs. 1290.89 crores in 1981-82. Import sales declined marginally to Rs. 1290.89 crores as against Rs. 1314.74 crores in 1980-81. This decline was attributed mainly to reduced sales of items of crucial importance such as edible oils, white printing paper, sugar and explosives in the home market.

The STC is maintaining buffer stocks of essential commodities for which it has its own and hired godowns in various port towns and up-country centres. New depots were opened in Indore, Katni, Faridabad and Ghaziabad to ensure distribution of edible oils.

Export Development

Since export of manufactured products has shown considerable stability in respect of market and price, the Corporation is putting all its efforts on development of export of manufactures. For this, the Corporation is providing infrastructural facilities to the associated export units.

With a view to step up the competitive capacity in the world market, the Corporation is lending its helping hand to associate suppliers in creating wider supply base and making improvements in quality, grading and packaging.

Shortcomings

Distribution of essential commodities by the Corporation has been far from satisfactory. It failed to monitor suitably and effectively the supply and demand situation of such items. Numerous instances can be quoted when the Corporation could not import items at times when they were most needed. Further, delay in their disbursement resulted in shortages in the home markets. This happened in the case of edible oils, rubber and newsprint paper. A serious charge is levelled against the Corporation that it concentrates much on marginal functions like canalisation of exports and imports on Government account.

The fact is that an objective review of STC's working is required along with the preparation of a perspective plan for a powerful result-oriented export drive. With a view to enabling the Corporation to make a major dent in the overseas markets, micro level studies identifying specific trade opportunities may be conducted. Export marketing studies for new items should be undertaken. ☐

(*Contd. from Page* 9)

Are trade unions really responsible ?

because of that the poverty striken population is not getting their due. Such fantastic fairy tales are publicised to hide the real sources of poverty and to show the organised workers in untavourable light. This apart, it is a fact well established also by the CSO, that during the seventies while the net national income increased by 36.2 per cent, index of real earnings in the corresponding period rose by a mere 1.2 per cent.

The attack on collective bargaining has always been a part and parcel of wage policy—a policy of wage restraint or of wage freeze. The Council of Indian Employers in their wage policy which was recently published has advocated complete abolition of the bonus system, doing away with the system of sliding scale DA and no automatic compensation of the rise in the cost of living and under cover of a "meaningful wage policy", they wish to enforce a substandard wages of level.

Conflict on wages question is in fact a fundamental as well as a major issue of conflict between Labour and Capital. All other issues of industrial relations are subsidiary to the main issue. Unrest is therefore natural in view of the existing wage policy being pursued and the labour policy being geared to buttress that policy. It is also a truism and a fact of life and experience that without unrest or strike struggles or at least strike threat, no demands are settled; benefits and rights that the working class enjoy have not come as bounty but as a result of long struggles and sacrifices. Many conflicts and struggles can of course be averted or minimised if the Government and the employers abandon their existing myopic policies which are neither in the interest of labour nor of the country, and see fit to reconcile with realism.

Indian agriculture needs more support from meteorology

Agriculture is the backbone of Indian economy. And agriculture is at the mercy of weather conditions. For a country of India's magnitude, frequently hit by the fury of floods and droughts there is great need for paying greater attention to agricultural meteorology. Predicting droughts and floods is a specialised and complicated subject. Nevertheless various agricultural research institutes should be involved by equipping them with first class field observatories for conducting researches. For broad basing the role of agricultural meteorology, efforts should be intensified to start teaching this subject at all the stages of the university education in agriculture.

L. C. MAHAJAN

YEAR after year recurring natural calamities in the form of floods, droughts, cyclones and the like ravage crops in various parts of the country and cause untold miseries to the human, animal and plant population. These disasters debilitate the agricultural and industrial economy bringing, as it does in its vogue, the grave problems of relief and rehabilitation.

Gross National Product of India is greatly affected by the vagaries of the monsoons on the cropping pattern and agricultural yields. If there is one single natural factor, which can undo the progress of agriculture in spite of the best inputs, management and technical know-how, it is the weather. The validity of the statement is quite obvious as we have been witnessing in the past, year after year, the havoc which is wrought by adverse and unpredictable weather conditions on our economy. This is more so because the performance of our economy is still largely influenced by the performance of the agricultural sector. The disasters are either in the form of drought or uneven occurrance of rainfall or excess rainfall. Such abnormal variations in weather conditions following a typical cyclical pattern, more or less, nullify our efforts towards self-sufficiency on the agricultural front, in spite of the rapid technological and scientific break-through achieved in the field of agricultural production.

There are three major groups of factors which influence stability of agricultural production, viz. weather, pest epidemics and public policies. Herein we discuss only the former, that is the effects of weather aberrations, on the performance of the Indian economy. These are, however, beyond human control. The overall strategy for minimising the adverse impact of the aberrations in weather behaviour on agriculture may be :

(a) to introduce crop life saving techniques;

(b) to popularise alternative cropping patterns based on weather conditions;

(c) to introduce compensatory production programmes in irrigated areas and in off seasons.

More so, it is pertinent to systematise efforts in the field of disaster management with regard to human, animal and plant populations. This can be done through the installation of early warning systems and timely action programmes against cyclones, floods and droughts with the aid of meteorological studies covering hydrological meteorological and agro-climatological sciences assisted by radar and satellite. Similarly, in order to mitigate the affect of the miseries. rescue and relief operations through the coordinated efforts of Governmental and voluntary agencies can be initiated. Herein we only discuss the subject of Agricultural Meteorology.

Historical Perspective

The role of meteorology in our national economy via the agricultural sector has been highlighted earlier. Weather and climate are important factors which influence crop production pattern as well as yields. They also indirectly control losses due to the incidence of crop pests and diseases. It is no wonder that the need for developing agricultural meteorology was felt, as early as 1928, in India. Subsequently, the use of meteorology data, instruments and methods of recording and interpreting observations in the domain of agriculture were introduced. This required the study of statistical as well as biological aspects of weather behaviour. It was, perhaps, therefore, that Agricultural Meteorology Division was set up in 1932 in the India Meteorological Department.

Agriculture Meteorology Division

With the help of well-equipped field observatories, the Agriculture Meteorology Division conducts meteorological experiments which are of immense relevance to agriculture. In the past, this Division conducted basic studies in agricultural meteorology, micro meteorology, water and heat balance above the ground etc. This Division also prepared detailed district-wise and crop-wise weather calenders relating to length and breadth of the country. These calenders are useful for weather service bulletins recording actual and expected weather conditions, for each district, which are likely to prevail for the next two-three days. These weather bulletins are broadcast in local languages by the All-India Radio as part of their rural programmes.

Indian Institute of Tropical Meteorology

This Institute was constituted as an autonomous research body on 1st April, 1971 with the object of conducting research in all aspects of meteorology with particular reference to tropics including weather modification. Prior to this, the Institute functioned as part of the India Meteorological Department. The work at this Institute is organised under five sub-disciplines viz., (i) Forecasting Research, (ii) Climatological and hydrometeorological, (iii) Physical Meteorology and Aerology, (iv) Instruments and Observational Techniques, and (v) Theoretical Studies.

The objectives of the research being carried out at the Institute are planned towards improving *inter alia* the accuracy of weather forecast by evolving criteria for prognosticating fluctuations in weather behaviour and towards modifying the weather specially in the sphere of precipitation enhancement. These objectives aim at equipping the scientists engaged in the field of agriculture, aviation, flood control and planning with requisite inputs concerning weather information. Efforts are in progress for improving further the techniques for predicting weather one to three days in advance as well as weather forecasting 5 to 20 days in advance. The former is technically called the 'short range weather forecasting' and the latter is designated as extended range forecasting. Besides, there is the medium range forecasting for predicting weather 3—5 days in advance.

Studies at the Institute are also conducted to develop the water resources potential of the country as also to examine and to assess the efficiency of augmenting natural rainfall in rain deficit and drought prone areas by the process of seeding the clouds. Techniques for understanding the relationships between the climatology in the past, vis-a-vis the existing one and the significant changes occuring therein are studied with a view to gain insights into the climatic aberrations and vagaries giving rise to unprecedented droughts and floods.

Fifth Plan Progress

Major scientific programmes undertaken at the Institute of Tropical Meteorology during the Fifth Plan comprised :

(i) Radar study of rain and rain bearing clouds,

(ii) Studies in cloud micro-physics and investigation of the feasibility of increasing rainfall by cloud seeding,

(iii) Studies in air pollution,

(iv) Instrumentation for cloud physics and weather modification studies,

(v) Development of simulation techniques for cloud physics studies, and

(vi) Studies in palaeo—climatology.

These scientific programmes were initiated during Fifth Plan and are being carried out as continuing projects even in the Sixth Plan.

Weather Modification

On the recommendations of the Committee constituted by the Government of India for Weather Modification, a Research Project at the Indian Institute of Tropical Meteorology, Pune, has been established for undertaking research and operations connected with weather modification in the country. The Project envisages strengthening of the existing research facilities in this areas as well as for the creation of a Unit for rendering assistance to the State Governments or undertaking operational rain enhancement experiment. The Institute is engaged in conducting controlled rain enhancement experiments in the Pune region. The Institute gives technical assistance to State Governments for undertaking such experiments in their areas. The Project is of great significance especially to the States experiencing droughts. Every year, a few States in the country get adversely affected due to the erratic behaviour of the summer (June-September) and North-East (October-December) monsoon seasons. In view of these vagaries the need, for developing suitable weather modification technology suitable for the Indian conditions as well as for assisting the State Governments for undertaking cloud seeding operations at short notices, is urgently felt.

In India, floods cause serious damage to crops, human and live stock lives and prosperity every year. A Flood Meteorological Organisation to cover different river catchments was set up in the Fourth Plan and eight Flood Meteorological Offices were set up. In the Sixth Plan it is proposed to set up a Flood Meteorological Office one each at Agra and at Asansal. The Flood Meteorolgical Organisatin will be modernised by using mini computors to compute rain fall date and by obtaining rain fall data on real time basis by W|T from a few selected stations in inaccessible areas. Four Glaciological observation posts will be started to collect data regarding the pace of snow accumulation and snow-melt in the upper water sheds of the Himalayan rivers. In 1983-84 a glaciological observatory will be set up at Kalpa and field organisation set up for assessment of water resources.

It may be interesting to know that the technology of weather modification has made considerable progress in USA, USSR and elsewhere abroad as war weaponary for destructive purpose. Flooding of an area by cloud seeding and thereby precipitating a heavy rain fall over the largest area is only one of the many weather weapons developed by the U.S.A. and the U.S.S.R. Some of the more gruesome weapons include creating repeated droughts in distant area, guiding cyclones and hurricanes to destroy coastal cities, using artificially induced lightning to set fire to forests and other vulnerable targets, creation of artificial fog over any area to camouflage the army manoevres or prevent enemy attack and dissipation of natural fog to enable war planes to plunder the enemy. The weapon of weather modification was successively made use of by the U.S. Air Force as early as 1967 in order to wash out the Ho-Chi-Minh Trail used by the North Victnamese to infiltrate into South Vietnamese. We are trying to perfect and deploy the weather modificaion technology for peaceful purposes in the Agricultural sector of our Economy.

Monex—79

As a step in this direction an International Experiment called Monex-79, studies was conducted in May-August, 1979 involving large financial, technological and scientific resources, towards solving some of the problems of monsoon meteorology. A lot of systematic data was generated. Scientific analysis of these data was made regarding the genesis and movement of tropical weather behaviour including tropical storms by utilising the conventional data as well as the unique scientific data becoming available from the operational weather satellites and the data generated by the INSAT Programme and the Aircraft Reconnaissance flights. A MONEX Data Analysis and Processing Centre is being set up during the current year for collection and processing of large volume of mateorological and oceanographic data collected during the various monsoon experiments and to enable data becoming available to user scientists in computor compatible formate as well as in printed volumes.

Agricultural Meteorology

An increasing awareness is being felt regarding the need for inter-institutional collaboration for the collection of basic crop and weather data and interdisciplinary rapport between the meteorolcgists and agricultural scientists. With a view to satiate these requirements, Agro-meteorological (Agro-met) Advisory Service was introduced in the Fifth Plan. During Sixth Plan, it is being extended to state levels. The network of evaportranspiration stations and soil moisture network are proposed to be extended and rainfall data collected from a number of state rain gauge stations on real time basis with a view to improve rain fall forecasts. Another programme is Rainfall Climatology for Agricultural Planning "which is intended to advise the farmers regarding the best period for sowing operations and for evolving appropriate cropping patterns." The beginning will be made with the state of Rajasthan.

Hydrometeorology:

Detailed hydrometeorological or Basin rainfall studies are inescapable for development and management of the water resources of different river basins of the country. For successful development of agriculture, assured irrigation is a must through the various canal systems working in the country, but the proper functioning of the canal systems, in turn, depends on the proper management and availability of water resources of the river basins.

Other Schemes.

Other schemes relating to meteorological study include the strengthening of instruments and observational techniques to study the other characteristics for the numerical models for simulation and their relation to the atmospheric predictability, augmentation of supporting technical facilities and staff in order to cater to the growing requirements of research. Similarly, the study of the Cyclone Warning and Disaster Warning Systems, Climatology etc. are among the other aspects of meteorology. All these other programmes are necessary for the successful implementation of the programmes relating to meteorology, monsoons and warning systems.

Plan Outlays

Plan outlays|expenditure for the Sixth Plan as well as for the Annual Plans for these programmes within the Inter-Meteorological Department are as given in table below :

Sl. No.	Name of the Programme	Sixth Plan 1980-85 Outlay	1980-81 Actual Expen.	1981-82 Actual Expen.	1982-83 Proposed Outlay	1983-84 Proposed Outlay
1	2.	3.	4.	5.	6.	7.
1.	Agricultural Meteorology	107.90	1.42	0 52	9.00	16.81
2.	Hydrometeorology	135.85	8 40	2.04	10.00	34.9
3.	Cyclone Warning & Research	265.91	62 41	83 04	8.40	33.64
4.	Climatology	24.20	..	..	2.00	2.51
5.	MONEX-79	250.00	204 61	3.23	35 27	18.20
6.	INSAT-I	1170.00	245.10	571.91	411.33	397. 66
7.	Others	2073.14	185.72	143.86	409 99	620.85
8.	Total I.M.D.	4027.00	707 39	304.65	895.00	1123.76

Considering the importance of meteorology in the development of agriculture, greater attention need to be paid to the development of this science. This augurs well to note that agricultural meteorology has been recognised as an important science for the development of agriculture. The subject of meteorology has been given global attention since the World Meteorological Organisation was engaged in developing what is known as the "World Weather Watch" through space probes and artificial earth satellites which make available daily global pictures of weather conditions such as the state of cloud formation, centres of cyclones, storms etc.

For a country of India's magnitude and size, frequently hit by the fury of floods and droughts, the need for further development of this science is still

(*Continued on page* 24)

The 'have-nots' will soon strike at the 'haves'

Rural development and land reform must go together. But this is not an easy task. In India a number of legislations to reform the land structure, and many schemes aimed at the agricultural development have been brought out. But all these have benefitted only those who own land. The reasons are not far to seek. The "have" farmers have managed to retain most of their land, and been enjoying the benefits of the developmental schemes, by out-witting the "have-nots" who do not own the land and have no financial, social and political power. But one thing the have-nots have started asking the Government is that why others were progressing, why not they? So it is high time for the Government to ameliorate their plight. If not, the day is not far off when they will unite to strike at the root of the ivory tower of the "haves".

A. N. SETH

RURAL development is aimed at improving the living conditions in rural areas. As it requires heavy public investment in initiating this process it becomes necessary to ensure that maximum return is obtained while fruits of development are shared equitably among the needy.

In an exploitative society with sharp in equalities in wealth and power it is inevitable the upper strata reap the fruits of development while the weaker sections are left high and dry, resulting in increased disparities and heightened tensions. It has also been the experience that in exploitative, feudal societies the development processes are inevitably slow. Thus to promote rapid development and to ensure that the weaker sections reap the fruits thereof, it becomes necessary to remove the distortions in the land tenure structure which impede these processes. And this is the role of land reform to correct such defects in the agrarian structure. The two processes of land reform and rural development must therefore go together. In fact, the former should precede the latter to avoid waste and get the maximum return on the investment. However, it is not an easy task to combine always the two processes into an integrated plan. India's case illustrates these points admirably.

India is still very rural and agricultural despite the big effort[illegible] mounted since 1947 at industrialisation. Out of every 100 persons 76, and out of 100 main workers 79, still reside in the country-side. In fact, in terms of absolute numbers, the rural population has increased by about 19 per cent and the number of workers by 21.5 per cent between 1971 and 1981.

Of the 174 million rural workers, over 81 per cent were engaged in agriculture during 1981. The remaining 19 per cent were engaged in house-hold and other occupations such as non-agricultural labourers, rural artisans, small businessmen etc. Of those engaged in agriculture 51 per cent were classified as cultivators (farmers) and over 30 per cent as agricultural labourers. Unfortunately, the population census of 1981 on which the above data are based, does not give the break-up of cultivators into owner farmers, tenant farmers or share-croppers. It is generally accepted that there has been a sharp decline in the number of tenant cultivators/share-croppers during the past 3 decades.

A major change in the composition of the agricultural population should be noted here. Between 1961 and 1981, while the number of agricultural workers (including cultivators and agricultural labourers) increased from 62.5 millions to 74.1 millions an increase of about 10 per cent, that of agricultural labourers almost doubled from 16.7 millions to 32.5 millions. And most agricultural labourers are landless. The causes of these two major changes in the rural class structure sharp decline in the number of tenants and share-croppers and a phenomenal increase in the number of agricultural labourers, we shall examine shortly. The rural class structure and the changes therein have been noted here with a view to facilitating a better appreciation of the rural development processes in India.

It was natural that in a country which is predominently rural and agricultural rural development aimed at improving the living conditions of the people get a high priority in India's Five Year Plans of development and increase in agricultural production should constitute a major plank in the strategy for rural development. Accordingly, programmes of irrigation and land development, fertilizer production, and the development of high quality seeds a net-work of extension services received a high priority from the Indian planners. As a result, agricultural production has much more than doubled between 1961 and 1981 and all the shortages in foodgrains, cotton, jute etc. resulting from the transfer of rich agricultural areas to Pakistan during the partition of India have been wiped off. And despite the fact that the population of India has since doubled, the per capita availability of food grains has rather improved.

That is not all. Rural electrification, improvement of communication (more of post offices, and extension of roads and railways and road transport), and expansion of educational and medical facilities have all made a phenominal progress. And so has the expansion of the rural credit. Cooperative movement now covers a much larger area and since the nationalisation of the commercial banks in 1975, most banks have penetrated increasingly into the rural areas. Private money lenders who once played a dominant role in rural credit, have now switched over from credit to trade. Changes in price structure also favoured the agricultural producers. With the introduction of adult franchise immediately after independence, rural India now has a big voice in deciding who will rule, especially at the State level. The rural scene has thus changed considerably during the past 35 years.

But the question is who had benefitted from these programmes. Naturally, agricultural development benefitted those who had lands; those who had more land, benefitted more, those who had less land, benefitted less, and those who owned no land derived little or no benefit. It was generally assumed that once agricultural production expands, there would be more to go round and all would benefit thereby. This assumption has been falsified by the Indian experience. For instance, a recent survey carried out by the CARTE in the green revolution area of the Punjab (in District Patiala) has shown that the wages of agricultural labourers have not kept pace with increasing prices between 1970 and 1980. Thus real wage has actually declined during the decade. This is true of most parts of India. The only area where the real wage of agricultural labourers has increased is Kerala. And that became possible because of a major change in the agrarian (or land tenure) structure.

While examining the changes in land tenure structure in the various parts of India it should be noted that, politically India has a federal structure and 'land' being a state subject, land legislation is to be enacted by the states. However, the land policy to be pursued in the states was outlined at the national level in the First Five Year Plan. It was recommended that this policy should be adopted by each State as part of its plan with, of course, due regard to local conditions and needs. for Planning Commission also constituted a Central Committee for Land Reform, with the Prime Minister as Chairman to follow it up with the State Governments : and a land reform division was set up in the Planning Commission to serve as the Secretariat of the Central Committtee. Each State Government was asked to refer its proposals in draft to the Central Committee.

When the British left in 1947, lands in India were held broadly under two different systems :—

(1) Zamindari system and its variants such as Jagirs, Inams, etc. composed of large estates comprising some times hundreds of villages each. In some cases the estate holders enjoyed also administrative and judicial powers; and

(2) Ryotwari system which meant that lands belonged to the agricultural classes. As the big estate holders enjoyed the patronage of the British and in turn they supported the British, the leadership in India which was fighting the British naturaly developed a commitment to abolishing the system when it came to power. A spate of legislations was enacted for its abolition soon after 1947. The validity of these legislations was questioned in courts and the constitution of India had to be amended several times to guarantee their validity and to push through their implementation. As a result of these measures, 5 million tenants of former estate holders became owners of their holdings.

The abolition of the system which covered about 40 per cent of the country, contributed to a major psychological, social and economic change. This mini revolution became possible through a democratic process mainly for two reasons, the commitment of the leadership and the great upsurge in the countryside on the eve of independence.

In this process it soon became evident that the former Zamindars had managed to retain in many cases, large areas of land claimed as self cultivated land and that there were still layers' of exploiters above the actual tillers of land. The tenants of zamindars, who became the new owners, did not always cultivate their lands with their own or family labour. After they employed sub-tenants or share-croppers or agricultural labourers. It was also revealed that such layers of exploiters were not uncommon among the ryotwari holders and that in several cases they also owned large areas especially the absentees among them-the village money lenders and traders who had acquired large areas during the depression of 1930's. In 1955 the Planning Commission constituted a Panel on Land Reform to advise on the future line of action. Based on its recommendations the Planning Commission elaborated the land policy in sufficient details in the Second Five Year Plan.

The policy in the Second Five Year Plan was based on the economic consideration to remove impediments to rapid growth of agriculture and the social consideration to end exploitation. In the light of these considerations four major policy recommendations were made :—

(1) There should be a ceiling on land holdings. No one should own more than two family holdings, a family holding being defined as the area of land which an average family could cultivate with its own labour (hiring only such labour as is customary during peak seasons).

(2) There should be regulation of all tenancies, the object being to make the tenants (and share-croppers) the owners of land.

(3) As small holdings pre-ponderated, cooperative farming should be promoted to avoid wasteful investment and promote efficiency in agricultural production. The objective set was that all the lands in a village (not only small holdings) should be brought under cooperative management.

(4) As cooperative management developed the difference between those who owned land and those who did not would cease. Meanwhile, the wages and the working conditions of agricultural labourers were to be regulated to give them a fair deal.

With the death of Prime Minister Nehru cooperative farming was soon forgotten. In fact, with the exception of Nehru, few among the ruling elites then believed in cooperative farming. However, another spate of legislations was enacted by the state legislatures aimed at implementing the recommendations pertaining to ceilings, tenancy reform and wage regulation. In volume the legislation enacted could fill a whole library. In content and quality, however, it varied a great deal from state to state. In implementation much of the legislation was often ineffective. The reasons therefore are well known : the state legislatures were dominated by the "haves" and consequently gaps were left in the legislation which made it ineffective : the rural administration which was to implement the laws was pro "haves"; the have not were specially and economically weak and lacked an organisation which could protect and promote their interest; land records were not available or were defective and so it was not possible to ascertain who owned/cultivated what lands and how much etc. In these conditions it is little wonder that the powerful landowning interests entrenched in legislatures were able to defeat many of the measures in collusion with the rural administration. Ceiling laws were defeated through fictitious transfers and mala fide partitions. Under the legislations adopted during 1950's and 1960's no more than 1.2 million hectares were declared surplus and only 0.7 million hectares were actually distributed. Further strengthening of measure during 1970 yielded 0.9 million hectares for distribution. Thus less than one per cent of the total agricultural land has been redistributed in the whole process.

As regards tenancy reform three different approaches were adopted, namely :—

(1) regulatory approach to provide for regulation of rent and conferment of security of tenure, ownership being available only to tenants on the lands in excess of owner's ceiling;

(2) abolition approach giving each tenant the option to acquire ownership on payment of purchase price to be fixed by land tribunals: and

(3) state intervention to acquire landlords' interest in respect of all leased lands on payment of compensation and transfer it to the tenants thereof.

Regulation has proved completely ineffective. This has been the experience, not only in India, but all over Asia. In the present social milieu continuing policing of tenancy regulations is bound to be ineffective. The second approach of giving tenants the option to buy ownership has been equally ineffective. Due to lack of availability of finance and the extra legal pressures exerted by landlords few tenants were able to exercise the right. In fact, in Maharashtra state where this approach was adopted almost two-thirds the number of tenants lost their lands through evictions. On the other hand, in U.P. state where the third approach was adopted about a million tenants|share-croppers acquired ownership and the evictions were very few.

Regulation of wages and working conditions of agricultural labourers has generally remained on paper. As stated earlier even in the green resolution area of the Punjab, the wages of agricultural labourers had actually declined between 1971 and 1981. Several other studies seem to confirm it about other parts of India too with perhaps the solitary exception of Kerala state where real wage has actually increased. The Agricultural Workers Act of Kerala is being hailed today as the model legislation in this regard providing for regulation of wages and working hours, security of tenure and a scheme of provident fund. Apart from the sinews for its effective implementation, there, the agricultural labour is today so well organised that, legislation or no legislation, it can protect its interests on its own.

To come back to the question who has benefitted from the rural development programmes and land reform processes in India for which the state has spent crores of rupees during the past 35 years and enacted heaps of legislations. The major changes which have come about in the agrarian situation due to these developments are set out below—

(1) The green revolution accompanied by a favourable price structures made it profitable to cultivate land with hired labour rather than through tenants and share-cropper. Many absentee landlords resumed lands by evicting tenants to take up "personal cultivation" with hired labour. Absentee land-lordism is thus getting rapidly transformed into commercially oriented farming. In many cases this new farming class has taken to mechanised cultivation with direct and indirect state subsidies; and in this process farm labour is getting displaced. The commercially oriented farmer today exercises a great influence in Indian rural policy.

(2) In the wake of zamindari abolition, the extension of irrigation, the adoption of new technology, and a change in the price structure favouring agriculture, a new middle class of farmers has emarged all over India.

Belonging generally to intermediate castes, it is becoming increasingly assertive in and outside legislatures.

(3) The large-scale evictions of tenants due to ineffectiveness of land reform processes further accelerated by processes of green revolution has resulted in increased landlessness. According to a study conducted by the Ministry of Rural Development, the area under tenancy declined from 20.6 per cent of the total occupied area between 1951 and 1971. The worst affected in the process were the landless tenants (not owning any land) belonging mostly to scheduled castes and scheduled tribes.

(4) As a result of the above processes there has been a large increase in the number of agricultural labourers (with little or no land at all). Rapid increases in population since early 1940's have accelerated this process. As stated earlier the number of agricultural labourers has almost doubled between 1961 and 1981. They now constitute 30 per cent of rural workers. And if we add to it the number of marginal farmers (who are hardly distinguishable from labourers), together they constitute more than half of the total rural workers. They are the rural poor of India. In a statement made in Rajya Sabha on 27 November, 1980 based on 1977-78 consumer data, the Minister of Planning had stated that about 51 per cent of the rural population falls below the poverty line.

(5) The most important of all changes which have taken place during the past 35 years, is the one in the minds of the people, including the more vulnerable sections. They no longer consider poverty as the act of God or Fate. They have seen others grow. And they naturally ask why not they, more and more they look to the welfare state, which had initiated the whole process of change to set this inequity right.

Conscious of this, the Government of India has promoted special programmes in recent years aimed at improving the living conditions of the rural poor, such as Small Farmers Agencies, distribution of house sites; provision of production loans through branches of nationalized banks under the differential rate of interest scheme (DRI), subsidies for purchase of live-stock etc. And these programmes find a prominent place in the Prime Minister's 20-point Programme. Presently few rural poor have been able to avail of these facilities. The problem is that the rural administration and the bank officials are not sympathetic to them, and they must have their own share in the pie. And the community organisation which is often entrusted with implementation of these programmes, being dominated by the 'haves' who do not want to lose the source of cheap labour, cannot be enthusiastic about the implementation of such programmes as are apt to improve the bargaining power of the poor. With these odds against them the rural poor are not able, individually, to assert their rights in opposition to the vested interests. Nor can they bargain for a better wage or improved working conditions enforcement of other measures of land tenure reform unless they get organised.

The experience of Kerala is of great value in this regard. The CARTE has also been carrying out experiments during the past five years to develop models of organisations & institutions of the rural poor whereby they may be enabled to participate in development and improve their bargaining power. In this regard several questions arise—

(1) What form the rural poor institutions and organisations should take;

(2) How the State is to create conditions conducive to the growth of such institutions and organisations;

(3) What should be the role of the trade union movement and other voluntary agencies in promoting their growth;

(4) What should be the role which political parties can play without fragmenting such a movement.

To conclude, rural India has undergone a transformation during the past 35 years. The emergence of a class of commercially oriented farmers, growth of a middle class of farmers, the large scale eviction of tenants and the large increases in the number of the rural poor (the landless labourers and the marginal farmers) due to rapid growth of population, the evictions and the sub-division of landholdings are some of the major changes in rural policy. And above all is the change in the minds of the people. There is a ferment in the country-side. The growth of violence in several parts of rural India in recent years is an indicator of this ferment. The goat is beginning to look up to the lion. If harnessed for collective action through rural poor organisations and institutions this ferment can bring about a rapid socio-economic transformation in the country-side in a peaceful manner. And this should form part of an integrated process of rural development and land tenure reform. If not, once people's expectations have been raised, and they remain unfulfilled, the violence is apt to grow and bring everything down with it.

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all the more relevant. Needless to say that predicting droughts and floods is a specialised and complicated subject. Nevertheless various agricultural research institutes should be involved as rapidly as possible by equipping them with first class field observatories for conducting researches. For broad basing the role of agricultural meteorology, efforts should be intensified to start teaching agricultural meteorology at all the stages of the university education in agriculture, impart training to the concerned field staff and to infuse meteorological thinking in various agricultural activities including meteorological research of a biological nature. ☐

Can B.S.E.C. live up to the expectations?

The State of Bihar has tremendous potential for building up exports. An export house called Bihar State Export Corporation Ltd., was established under the recommendation of Indian Institute of Foreign Trade. The task entrusted to it to create export consciousness and earn hard currency has not been fulfilled. It is making good profit but the markets are mainly within the country.

MAHENDRA KUMAR

THE State of Bihar has tremendous potential for building up exports of several items as identified by the Indian Institute of Foreign Trade (I.I.F.T.). But the success in export efforts ultimately would depend on the initiative of the State Government and of the enterprising zeal in the public and private sectors, etc. located within the State apart from the dynamism of the personnel concerned with exporting. Against this background the I.I.F.T. Survey Team has recommended the establishment of an export house in the State of Bihar which established the "Bihar State Export Corporation Ltd.," as a joint stock company, under the Companies Act of 1956 in December 1974, for achieving a faster rate of economic growth of Bihar.

Imbalanced growth

The Central Government has made sizeable investment in the establishment of heavy industries like, Heavy Engineering, Fertilizer, Oil Refinery and Steel. But these heavy industries have had very limited growth impact on the economy of Bihar. Ancillary industries also have not been able to make much way in economic development of the State. Industrial growth in the past has been unbalanced as development has been mainly in large industries in the private and public sectors. And small industries for various reasons have had only a minor role in the development of the State. Consequently, it continues to be a backward State. Thus, there exists enormous scope for the setting up of new industrial units in village and cottage, small and medium sectors for the manufacture of various products as stated in the Survey reports of I.I.F.T. and National Productivity Council, in order to meet the much needed hard currency.

Comparing the Survey Report, conducted by the I.I.F.T., on the annual export potential of certain goods from the State of Bihar and its expected foreign markets with the present exports of certain goods and with limited foreign markets by the Bihar State Export Corporation Ltd. (B.S. Ex. Corporation Ltd.), it can be said safely that even after 8 years, Export Corporation has neither become able to catch those foreign markets nor those goods which were suggested by the I.I.F.T. Team. Even in such a situation with limited goods and limited foreign markets the Corporation could not achieve the estimated annual export as stated in I.I.F.T. Survey Report.

Most of the goods for export by the Survey Team of I.I.F.T. were not exported. Out of 29 exported goods only the following were slected from the I.I.F.T. Survey Report by the Corporation.

(1) Leather & Leather Manufactures.
(2) Crushed Bones.
(3) Woollen Carpets.
(4) Electric Bulbs.
(5) Handtools
(6) G.I. Pipes and Fittings.
(7) Lac.
(8) Madhubani Paintings.
(9) Siqqi 'Munj Articles.
(10) Toys.
(11) Fabricated Mica.
(12) Budha Pendent Leaves (Stone carvings).

It is thus obvious that the authorities of the Corporation have been experimenting in a light hearted fashion with the goods picked up by them for export. They have been trying one commodity after another from year to year, selecting a few in a particular year, not achieving success in them, giving them up in the next year, and again picking up some new commodities. In course of 8 years 29 types of commodities have been experimented with by the Corporation. What is important to note is that out of these 29 only 12 feature in the list of commodities drawn up by the expert team of the IIFT as suitable for export. Thus the authorities of the Corporation apparently disregarded the advice of experts and close to apply their own discretion and invested the Corporation's resources and their own time in the process.

B.S. Ex. Corporation Ltd., did not pay proper attention towards the foreign markets, suggested by the Survey Team of I.I.F.T.

Export Corporation mainly concentrated its attention on a few limited foreign European markets namely, those belonging to Western Europe, a few countries of Middle East and some isolated pocket in the Far-East like Honk-Kong. A very important gap left by the Corporation in its market net work is in respect of the Socialist Countries. It is a surprising fact, in view of the growing importance of these countries in India's foreign trade.

Going through the present report on export by the Export Corporation of Bihar it becomes obvious that the Corporation should have attained better export potential. It can be seen in the table No. 1.

The goods which are supplied to the B.S. Ex. Corpn. Ltd. from outside, the state are shown in Table 2.

Table—2

Goods Supplied to B.S. Ex. Corporation Ltd. from outside the State

Sl. No.	Items	Place of Origin
*1.	Woollen Carpets	Mirzapur Bhadohi (U.P.)
2.	Hand Tools	Jullunder
3.	Hand Drill Machines	Jullundur
*4.	Leather Goods	Calcutta
5.	Peacock Tail Feather	Calcutta
6.	Readymade Garments	Delhi & Madras

*Goods partly supplied from within the State.
Source : B.S. Ex. Corpn., Patna.

Table—1

Annual Export Potential of Bihar and the Present Export by B. S. Ex-Corporation Ltd.

Sl. No.	Exported items by the B.S. Ex. Corpn. Ltd.	Annual Export Potential	Present Export by the B.S. Ex. Corpn. Ltd.
1.	Leather & Leather Manufacture	2 Crores	1.64 lakhs
2.	Madhubani Paintings	50 Thousands	1.66 lakhs
3.	Sikki & Munj Articles	1 lakh	6.07 hundred
4.	Woollen Carpets	30 Thousands	7.38 lakhs
5.	Crushed Bones	5 lakhs	1.35 lakhs
6.	Toys	10 thousands	14.6 thousands
7.	Electric Bulbs	10 lakhs	1.49 lakhs
8.	Handtools	10 lakhs	41.1 thousands
9.	C.I Pipes & Fittings	10 lakhs	1.58 lakhs
10.	Lac	2.25 crores	1.59 crores
11.	Budha Pendent Leaves (Stone carvings)	30 thousands	1.8 thousands

Source : (a) I.I.F.T. Survey Team—Report on Export Potentiality of Bihar.
(b) B.S. Ex. Corpn. Ltd.—Patna.

Among the items mentioned in the above table only two items namely Woollen carpets and Toys could exceed their targets indicated by the expert team in the report of export potential. It may be mentioned that though the carpet business has proved to be a success, the Corporation procured its supply not only from within but from outside the State as well. In two other Commodities namely, Lac and Leather goods the performance was reasonably satisfactory though below the level indicated by the expert team in their report. Achievement in respect of 7 remaining commodities out of the 11 in the list of the expert team fell short of the targets.

It can be said that since 1975-76 till 1977-78 the Corporation had concentrated mainly on the export trade. But after 1978 due to the snatching away of lac trade from the Corporation the situation took a new turn. It gave a severe jolt to the export activities of the Corporation. And to compensate this trade gap the Corporation tried to sell the commodities more and more in the internal market rather than external one. This tendency of the Corporation after 1978 made it largely a sales Centre for internal trade rather than export house. This is a marked deviation from its object. It can be seen in the table No. 3.

Table—3

Goods Exported and Domestic Sale by B.S. Ex. by B.S. Ex. Corporation Ltd.

	1975-76 Rs.	1976-77 Rs.	1977-78 Rs.	78-79 Rs. Lakhs	79-80 Rs. Lakhs	80-81 Rs. Lakhs	81-82* Rs. Lakhs
Export	10,10,749.65	1,63,65,605.20	1,72,38,000	27.16	25.31	45.51	110.50
Domestic Sale	—	—	—	90.92	98.50	182.53	114.50
TOTAL	10,10,749.65	1,63,65,605.20	1,72,38,000	118.08	123.81	224.04	225.00

*Estimated.
Source : B.S. Ex. Corpn. Ltd., Patna.

In the year 1975-76 the total export of the Corporation was about Rs. 10.11 lakhs, in 1976-77 and 1977-78 the export trade was about Rs. 1.64 crore and Rs. 1.72 crore, respectively. But the situation changed from 1978-79. In the financial year 1978-79, 1979-80, 1980-81 and 1981-82 the export trade of the Corporation were about Rs. 27.16 lakhs, Rs. 25.31 lakhs, Rs. 45.51 lakhs and estimated Rs. 110.51 lakhs respectively. At the same time the Domestic sale of the Corporation were about Rs. 90.92 lakhs, Rs. 98.50 lakhs, Rs. 182.53 lakhs and estimated Rs. 114.50 lakhs accordingly.

The role played by the B.S.Ex. Corpn. Ltd. to boost up export rate of Bihar was not encouraging. In the case of Cotton Fabrics (Handloom) share of B.S.Ex. Corpn. has decreased from .00063 in 1978-79 to .00041 in 1979-80. The same is the case with silk Fabrics and Woollen carpets. The share of Silk Fabrics in 1978-79 and 1979-80 were .0011 and .0012 but it suddenly came down to .00033 in 1980-81, Woollen Carpets which had captured a good share in 1976-77 and 1977-78 in India's export trade (.00065 and .00056) came down to .00016 in 1978-79 and .00038 in 1980-81.

Scope for improvement

With the uncertain limited commodities; limited markets, dominance of domestic sale, goods purchased outside the State of Bihar, the decreased market share of the Corporation and the declining tendency in the export trade, the role played by the B.S. Ex. Corpn. Ltd. in the economic development of Bihar is not positive one. Earning profit by hook or by crook in successive years is not a sole indicator of efficiency. The tasks entrusted to this Corporation to create export consciousness and earn hard currency to expand its export trade and then to industrialise Bihar to ensure the steady path of development were quite unsatisfactory. How can it be said that Export Corporation of Bihar is running efficiently ? Only on the basis of earning profits to sell goods mainly in internal market.

Suggestion

Bihar State Export Corporation Ltd. should cover more and more exportable goods. Government of Bihar tries to integrate, Co-ordinate and Correlate the disintegrated and the haphazard development of the economy in a planned way the result will be tremendous. Every thing is available the only thing lacking is initiative and proper planning.

Progress of Twenty Point Programme

THE current year's targets for setting up of health sub-centres, integrated child development services blocks (ICDS) and tree plantation under the 20-Point Programmes have been achieved two months ahead of the close of the year.

In the case of health sub-centres the annual target of setting up of 7,931 new health sub-centres in various parts of the country has been exceeded with the sanction of 9,034 centres during the first ten months of the year. The achievement comes to 114% in this case.

Under the Integrated Child Development Services Programme, 320 blocks were scheduled to be set up during this year. All of these have been sanctioned.

According to a review of the progress of the 20-Point Programme made by the Planning Commission, 197.93 crore trees were planted in the country from April 1982 to January 1983 against the target of 196.14 crore trees for 1982-83

The States, where bonded labour exists, have freed and rehabilitated 31,928 families, thus achieving 89.1 per cent of their annual target of rehabilitating 35,828 families.

The programme of providing at least one source of safe drinking water in problem villages has made much headway. Already 28,817 villages have been provided with this facility, thus achieving 84.2 per cent of the target of covering 34,233 such villages during 1982-83.

A number of other schemes under the 20-Point Programme have forged ahead and achieved more than 60 per cent of their annual targets. These include the National Rural Employment Programme, distribution of house-sites, improvement of slums, energisation of pump sets, welfare of scheduled tribes and sterilization operations.

During April, 1982 and January this year, employment opportunities of 2387.7 lakh mandays were created in rural areas under the National Rural Employment Programme as against the target of 3,532 lakh mandays for the whole year. House-sites allotted during the above period numbered 6.83 lakhs as against a target of 10.43 lakhs for the year. The population benefiting from the environmental improvement of slums was 11.39 lakhs as against a target of 18.40 lakhs.

However, the targets set in Integrated Rural Development Programme (IRDP) have been achieved to the extent of 58.8 per cent only. Since this is an individual family benefit programme where bank loans have to be mobilised, there is limited scope for accelerating the programme in the remaining period of the year. Similarly, acceleration of village electrification and energisation of pumpsets depends on the funds that may be available from State Plans as also on the availability of power.

As regards bio-gas plants only 22,880 plants have been set up so far. The programme has, however, been accelerated and it is expected that 45,000 plants would be set up by the end of the year. ☐

Planning-what has gone wrong

In our Issue dated 1-15 September 1982, we had published an article on "Planning—a what has gone right or what has gone wrong" written by Shri K.S. Rama Murthy. In fact we had invited views from readers on this article. Responding to this Shrimati Prema, Professor of Economics in a Madras College feels that for tackling development problems, we should exercise the ordinary house holder's diligence and earnestness in the affairs of country, no more but no less.

SHRIMATI S. K. PREMA

When India attained freedom there was much enthusiasm as the future of the nation was in our hands. However, we failed to maintain enough mental equilibrium to arrange priorities in our planned development. In his teachings, Gandhiji was never tired of expressing his view that the prosperity of the people was in their own hand. He wanted the growth process to begin from below. He insisted that the production of the goods needed for the masses should be by the masses themselves. But the pleas fell on deaf ears. Perhaps the echo is now heard in China: under the leadership of Mao Tse-Tung, the commune experiment was taken up.

To achieve economic growth of major importance in a developing country like India, it is necessary to allocate effort and capital to do three things : (1) increase the quantity of reproducible goods (2) improve the quality of the people as productive agents and (3) raise the level of productive arts. This would mean imparting education, vocational training etc. on a large scale and to take measures for setting up improving the health of the people as a whole. Those items of spade work could have been carried out so that it could provide a strong base. In fact this should have been treated as part of the infrastructure to facilitate planning for processing growth. In essence having regard for our goal of establishing a socialistic pattern of society in the country, a transformation of the social structure needed top priority immediately after Independence. Unfortunately we failed to provide that. Instead our planning process was shaped largely in accordance with the doctrines of foreign economists and influenced by the "measure doctrines". In doing so the planners overlooked basic conditions of our country and the compulsions which our constitution has placed us in. It was taken for granted that the policy adopted in the developed countries could well be adopted here with the slight modifications to gain economic growth and so an era of planning was ushered in.

Climb down

The object of the first 5 year plan was described as the "raising of the living standards and opening up new opportunities for a richer and varied life......" A few years later, in December 1954, the Lok Sabha passed a resolution adopting "socialism" as the goal of India's economic and social policies. But only two years later, in 1956, the Second Five Year Plan accepted the adoption of the "Socialistic Pattern of Society" as the national goal. This was a climb down from the stand taken in 1954. During the III plan on the basis of findings of an expert committee set up by the Govt. of India in 1962, the gravity of the situation created by the mass poverty was recognised and the Govt. conceded that the eradication of poverty has to be the concern of any Govt. if it should hope for the continuance of the popular support. Nevertheless, the old system of "planning for growth" continued in the absence of any concrete measure to tackle mass poverty. In the fifth plan, however, a slight shift in the policy regarding the composition of growth was noticeable. It therefore dealt with the possibility of generating massive employment as a means of mitigating poverty. Apart from the feasibility of generating such employment the restriction of consumption of the top rich 30 per cent and its diversion to the bottom poor 30 per cent was also considered, along with the question whether the pattern of production and content of growth should not be changed from familiar pattern to a new pattern slanting to the amelioration of the poor : but unfortunately the plan operations did not take up all these questions. The technique of planning copied from the western countries and the growth theories resulting therefrom are not suitable for our needs since our constitution insists on the banishment of poverty, unemployment and illiteracy.

However the plans carried massive investments on heavy industries and many major industries. The relative share of industries and minerals has been increasing from 4 per cent in the first plan to 20 per cent in the II and III, 23 per cent during the annual plans and IV and 26 per cent in the V plan ; on the other hand the share of agriculture and community development during the same plan period was 15 per cent (I plan), 11 per cent (II plan), 13 per cent (III plan), 15 per cent (annual plan), 15 per cent (IV plan) and 12 per cent (V plan). If large industries and heavy industries are given emphasis it is bound to create more unemployment due to technological changes in production and the adoption of capital intensive methods of production. Investment and output have grown at a high rate but the 'production-mixed the technological-mix' have been so capital intensive that employment has not grown pari-passu. On the other hand the unemployment backlog has been increasing plan after plan. It was 3.5 million at the end of the I plan, and 7 million in II, 9 to 10 million in the III and it stood at 21 million in 1978. It is possible that growth in population explains partly non absorption of some of the traditional labour force in the industry. Nevertheless it cannot be denied that mere industrialisation cannot reduce unemployment to an appreciable extent in the Indian context. Without full employment the standard of living cannot be improved. Without proper education and training full employment cannot be generated. Therefore it follows that if the masses are to be lifted up from the subsistance level proper education and training is the primary pre-requisite.

Role of education

The UNESCO undertook many studies all over the world on the role that education plays in the development of nations. This should open our eyes. Of course it would have been ideal if note had been taken on the role of education in the growth strategy as a preliminary preparation even before initiating planned development. In other words the early stages of development require a predominant emphasis on the creation of infrastructure facilities rather than expenditure on new factories or personal consumption. In short in the early phases of development. the direction is more important than the actual physical achievement.

All that can be said about the achievement of past 3 decades is that we have just managed to build a few patches of prosperity in the vast desert of poverty. Now the situation is bewildering; essential commodities have become scarce; prices are soaring : The collective wisdom of our economists have failed to have any impact. This by itself may not be a reflection on the academic competence of our economists. Evidently there are some obscure factors in operation which make their calculations go wrong : or if it may be that the policy makers and the bureaucracy have been carried away by the select band of economists without giving weight to what others may have to say. Or it may be that our economists are too tall to perceive small factors down on earth : or deliberately ignore such small factors as immaterial or irrelevant. One thing is evident that our economists are influenced by the theories and doctrines borne on foreign soil which are not conducive to our soil. Whatever may be the case the fact remains that with a galaxy of eminent economists in the country and with all the plentiful natural and human resources available in the country. our national economy does not compare favourably with some of our neighbouring countries which do not commend those advantages. (Japan can be quoted as an example).

Inequality in distribution of wealth

We are able to see that despite all these planning exercises, the conditions created and sustained by the Govt. policy have resulted in aggravation of the inequality in the distribution of wealth. Millions of people especially in the rural areas continue to lanquish on the border line of abject despair if not of actual starvation. It will thus be clear that the predicted progress by the planning process has not been able to make headway. In any case, so long as such planning has not touched even the fringes of the poverty line—the most cherished goal of the constitution—there is ample justification for the general feeling that the technique of planning in India does not deserve the price that has been paid for it.

The planning exercises are all manifestations of technocrats' outlook and philosophy, which at best, aiming to achieve through planning, a scientific and rational utilisation of resources. The aim of our constitution rather our national aim, however, is quite different. Having set for ourselves the task of achieving socio-economic equality we should, infact, turn away from the technocrats type of planning; we should under no circumstances, sacrifice the principle of social equality on the alter of present concept of measuring "economic growth" with the yardstick of GNP; on the other hand, our aim should be optimum utilisation of productive resources compatible with the concept of effecting social equality. We should not hesitate to subordinate the principle of maximum output when it threatens to militate against the principle of social equality. In essence, therefore, while our stated goal is the establishment of socialistic pattern of society, our economic policy should, quite naturally, be subservient to social ends without allowing our visions to be obsessed by the luscions theory of the technocrat or the economists advocating maximum utilisation of resources for effecting an accelerated growth.

Economic Growth or Malignant Growth

This naturally leads us to the often repeated phrase "economic growth". All growth may not be healthy—there can be malignant growth. By design or oversight, the U. N. experts failed to spell out the definition or even the implication of the term "economic growth". One school of thought however would suggest that "it is a relation between the rates of increase in the capital and working force on the one hand and the increase in the population, on the otherhand, such that per capita output is rising". According to this, per capita income became the test of economic growth. But it is now, more or less, well recognised that a mere increase in the per capita income cannot carry the full impact of national growth with reference to the national goal of socio economic equality. Therefore it is clear that whatever may be its status as an indicator of economic progress per capita output can not constitute "growth", if it failed to have any favourable impact on the socio-economic condition of the masses. In fact to reach our national goal of eradication of mass poverty, no degree of economic progress can be real growth unless it is accompanied by the eradication or atleast a drastic reduction of existing inequalities in the distribution of wealth.

To us, in India, the concept of economic growth is inextricably tied up with the distributive aspect. In this view, a sustained increase in the per capita income, accompanied by a corresponding removal of disparities in its distribution would alone constitute progress towards economic and our national goal it may be said that growth can be partly achieved if it is possible to devise measures to increase the per capita output of the poor. Simultaneously it will be necessary to lay down norms for the production of goods and services necessary for the poorer sections.

(Continued on page 30).

Tit Bits from Parliament

Rail Travel Concession for Orthopaedically Handicapped

IN reply to a question in the Lok Sabha recently the Minister of State in the Ministry of Railways, Shri C. K. Jaffar Sharief spelt out the details of rail travel concession for orthopaedically handicapped persons.

This facility is admissible to that category of orthopaedically handicapped persons who cannot travel without an escort, on production of a prescribed certificate from a Government doctor or an orthopaedic surgeon to the Station Master of the starting station. The certificate is valid for one year and an attested or a photostat copy is required to be surrendered to the booking clerk at the time of issue of ticket. The certificate can be issued by any Government Doctor or orthopaedic surgeon including those in Delhi Administration.

Increase in India's Exports

INDIA'S exports increased by 15.5 per cent during the first nine months of 1982-83 as compared with the corresponding period of the previous year. Despite the deteriorating international economic and training environment, the Government succeeded in maintaining the momentum of increased exports which started in 1981-82. During the year under review, the efficient management of the domestic economy and concrete measures initiated by the Government for promoting trade, succeeded in maintaining higher exports while arresting the trend of growth in imports. Imports during April-December 1982 increased only by 8 per cent as compared to 37.4 per cent in 1980-81 and 8.6 per cent in 1981-82, reflecting the result of increased efforts towards replacing imports in vital areas such as crude oil, fertilisers etc., according to the Annual Report for the year 1982-83 of the Ministry of Commerce circulated among the Members of Parliament.

However, the country's trade policy in the matter of import of essential raw materials, capital goods, technical know-how, etc., remained liberal in the interest of sustained growth and development of the economy. The result is manifested in the reduction of India's foreign trade deficit. On a provisional basis, the deficit of foreign trade during April-December, 1982 as Rs. 4,060 was lower as compared to the deficit of Rs. 4,109 crores in the corresponding period of the previous year.

Greater availability of edible oils for PDS

ABOUT 5.5 lakh tonnes of refined, bleached and deoderised (RBD) palmolein, RBD palm oil and refined rapeseed oil will be distributed through the public distribution system during the oil year 1982-83 (November-October). This will be 1.47 lakh tonnes more than 4.03 lakh tonnes distributed in 1981-82.

According to the Annual Report for the year 1982-83 of the Department of Civil Supplies, the Government imported 9.85 lakh tonnes of edible oils in 1981-82 (November-October) to meet the gap between the demand and availability of indegenous edible oils. Measures are also being taken to increase the production of edible oils so as to reduce gradually dependence on imported edible oils.

In 1981-82 oil year the production of vanaspati was also higher at 9.04 lakh tonnes as compared to 8.27 lakh tonnes in 1980-81 and 6.79 lakh tonnes in 1979-80. With a view to increase the availability of vanaspati during the festival season the supply of imported edible oil to vanaspati industry was stepped up from 60 per cent to 70 per cent in August 1982 and to 80 per cent in September-November 1982. Supply of imported edible oils to the States for distribution through public distribution system was also enhanced.

The main stress of the Deptt. of Civil Supplies during 1982-83 has been towards meeting the supply and availability of essential commodities by increasing production and removing movement constraints. A close and continuous watch was kept on the price and availability of essential commodities for taking appropriate and timely measures

The public distribution system is being strengthened and expanded under the New 20 Point Programme particularly in the rural areas as well as the backward, remote and inaccessible areas. The number of fair price shops in January 1982 was about 2.31 lakhs.

(Contd. from page 29)

Reasons for failure

The basic reasons for the failure of our economists would seem to be that their approach towards solving the Indian economic development has not been realistic. The Indian economy at present seem to call for a departure from the beaten track so far travelled by them. Our problems being in Indian soil any measures to solve them must be related to Indian conditions. It is necessary and rather urgent that bold steps are taken to rehabilitate the rural sector so that mass poverty could be tackled successfully.

What we need to do in tackling development problems, is to exercise the ordinary house-holders' diligence and earnestness in the affairs of the country, no more but no less. What we need is not tactics but strategies not wishful talk but active implementation of the talk. □

Economic Notes

"Olympic Order Gold" Award for Smt. Indira Gandhi

THE PRIME MINISTER, Shrimati Indira Gandhi, was awarded "Olympic Order Gold" by H. E. Mr. Juan Antonio Samaranch, President, International Olympic Committee in New Delhi recently. In a speech made after receiving the award, the Prime Minister said : "Ours is a highly competitive world and so are games. There is tension in work and contemporary living. In games it is doubly so but with a difference. In sports the aggression is tempered by a spirit of togetherness and cooperation. Our world is well rounded and well balanced, yet humans look at it and its immediate problems in fragments. In India we believe in coexistence, in living and working together on this earth, since we have no other. Games cut across barriers of nationality, class, creed, race, politics and ideology."

Stringent action under Essential Commodities Act

ABOUT 1.5 lakh raids were conducted under the Essential Commodities Act between January 1982 and February 1983 by the State Governments with a view to intensifying campaign against poarders of essential commodities. As a result over 98,000 persons were arrested and essential commodities valued at about Rs. 9.5 crores were seized.

The maximum number of 48,336 raids were conducted in Orissa followed by 29558 raids in Uttar Pradesh. However, the maximum number of 4082 persons were arrested in West Bengal followed by 1777 persons in Uttar Pradesh.

The action against smugglers, hoarders and tax-evaders was intensified under the New 20-Point Programme initiated by the Prime Minister, which emphasised the need for continuance of strict action against such anti-social elements. The State Governments were advised from time to time to vigorously enforce the provisions of the Essential Commodities Act and similar other legislations including Price Display Orders and Storage Control Orders to curb the activities of black marketeers and hoarders.

Measures to increase oilseeds production

NOTWITHSTANDING a decline in area under kharif oilseeds due to extensive drought, oilseeds production this year is expected to be about the same as last year. The target for 1982-83 has been placed at 118-120 lakh tonnes. In 1981-82, the production was a record of 120.6 lakh tonnes. During 1983-84, a target of 125 lakh tonnes of oilseeds has been fixed.

To make up the kharif shortfall and to exceed the rabi targets, a massive campaign was launched all over the country. About four lakh seed mini kits alone were distributed to farmers. This was 40 per cent more than a year earlier. For the rabi oilseeds, special emphasis has been laid on groundnut cultivation.

Commission set-up on Centre-State Relations

THE PRIME MINISTER, Shrimati Indira Gandhi in a statement made in Parliament regarding setting up of a Commission on Centre-State relations said :

The Government have been considering for some time past the need for a review of the existing arrangements between the Centre and the States. While keeping in view the social and economic developments that have taken place over the years, such a review will take into account the importance of the unity and integrity of the country for promoting the welfare of the people. The Government have accordingly decided to set up a one-man Commission under the chairmanship of Shri R. S. Sarkaria, Retired Judge of the Supreme Court of India to go into these matters.

The Commission will examine the working of the arrangements between the Centre and the States and recommend such changes in the said arrangements as may be appropriate within the present Constitutional framework.

Revised estimates for Tripura power project

THE Planning Commission has approved the revised estimates of Tripura project for construction of 66 KV second feeder from Gumti Hydro-electric project to Agartala via Taliapura and associated sub-station.

Now, estimated to cost Rs. 3.07 crores, the scheme envisages construction of 95 km single circuit transmission line from Gumti Hydro-electric project to Agartala grid sub-station, extending 132 KV grid sub-station as Agartala and Dharamnagar, creation of 2×5 MVA 66|33 KV Sub-station at Badarghat by looping in and looping out of the existing single circuit transmission line from Gumti HEP to Agartala, and power line communication circuit.

New machines for village industries

THE Saranjan Sammelan has recommended certain improved machines for fibre industry for the extraction of sisal and banana fibre which today almost goes waste. The Sammelan also recommended new wheels which will improve the quality of the pottery articles and increase the productivity.

The 16 instruments entered for evaluation to be conducted by the panel of technical and economic experts in the Khadi sector including the replacement of the existing new model charkhas with antiwedge rings and elliptical travellers resulting in an immediate increase of at least 50 per cent in productivity.

Higher allocation of foodgrains for public distribution

A quantity of 14.78 million tonnes of foodgrain was distributed through public distribution system during 1982. It was 13.6 per cent higher than the previous year when the outflow was 13.01 million tonnes. During January 1983 too, 1.45 million tonnes of foodgrain was released as against 1.17 million tonnes in January, 1982.

The Annual Report of the Department of Food for the year 82-83 notes that the procurement of 15.21 million tonnes of foodgrains, out of 1981-82 crop, was an all time record. This was 2.9 million tonnes more than the procurement of 12.3 million tonnes, a year earlier. Of this 7.27 million tonnes was rice and 7.72 million tonnes of wheat.

The procurement was not only higher in quantity, but it was also higher in terms of the percentage of procurement to production, the percentage being 12.5 against 10.4 in 1980-81 crop year.

Cloth Requirements under Sixth Plan being met

THE Government continue to follow the objective of meeting the cloth requirements of a growing population during 1982-83, according to the Annual Report of the Ministry of Commerce circulated among the Members of Parliament. To meet the target of 13,600 million metres of cloth production at the end of the Sixth Plan, the Government pursued the textile policy announced on 9-3-1981 which seeks to ensure harmonious and balanced growth of all sectors of this industry. This policy takes care, in accordance with national priorities of the interests of the consumers, of textile goods, growers and producers of cotton, wool and silk, weavers in the decentralised sectors as well as the organised mill industry.

Road Passenger Transport

THERE are 54 State Transport Undertakings engaged in road passenger transport. Their fleet strength at the end of March, 1982 was around 79,000 vehicles which includes about 74,000 buses and about 5,000 other vehicles. This worked out to roughly 58 per cent of the total buses plying on roads in India. The State undertakings carried around 38 million passengers daily.

The total capital invested in the State Transport Undertakings at the end of March, 1982 was Rs. 2437 crore. The number of employees in the State Transport Undertakings was 5.70 lakh. The traffic staff constitutes 65 per cent, the workshop and maintenance staff 30 per cent and the administrative and other staff 5 per cent.

Elementary Education makes headway

THE national target of additional enrolment of children in the age group 6—14 in classes I to VIII, set at 40 lakhs during 1982-83, has been exceeded by 36,000.

Nine States and five Union Territories have exceeded the targets while seven other States have fulfilled the targets.

The most remarkable achievement has been recorded in U.P. Against the target of 6.12 lakh additional enrolment, the achievement is 8.35 lakhs.

Punjab and Kerala, where enrolment at the primary stages had already exceeded hundred per cent, had scope for additional enrolment at the middle stage only.

Readers' Forum

R.R.Bs

Dear Sir,

With reference to the article "What ails Agricultural Credit Institutions" (Yojana 1—15 March) by A. R. Patel, I want to draw your attention that R.R.B.s do not come as a measure of the 20-Point programme as stated by the author. The 20-point programme is not a programme launched by Government but it is just a party's guideline to its workers. No Government programme should be linked with a party's guideline or manifesto, does not matter if it is, even, of ruling party's.

No doubt the article is very informative and excellently delinates the facts and problems, but the objection I have raised is to be kept in mind. Such things are misguiding, at least to those students who rely on "Yojana" for datas and information.

R.R.B's came into existence through an ordinance which was later accepted as an Act in 1976.

Yours etc.
Sharad Chandra Singh
MIG—67
Indira Nagar,
Kanpur-208 026.

IDA Credit for Subernarekha Project

AGREEMENT for credit of SDRs 116.3 million (equal to US $ 127 million) was signed with the International Development Association in November, 1982 for the execution of the first phase (1982-1986) of the Subernarekha Irrigation System.

Giving this information in a written reply to a question by Sh. Sukomal Sen in the Rajya Sabha recently Shri Ram Niwas Mirdha, Union Minister for Irrigation said that the first phase project with IDA assistance comprised of construction works on the Chandil Dam and left canal ; Galudin Barrage and canals ; Ichha Dam and canals ; and the Kharki canals. It also includes construction works on the minor distribution system in an area of about 21,000 hectares in the project area in Bihar ; establishment of pilot irrigation areas of about 250 hectares each in Bihar and Orissa and in the project areas ; facilities in Khangual in Bihar and in Sambalpur in Orissa for training in development of minor distribution system and in water management techniques : establishment of a water pollution control programme, in the project area in Bihar and research, studies and monitoring and evaluation.

Shri Mirdha said that the agreement had become effective from January 10. 1983. The IDA credit of SDRs 116.3 million is on usual IDA terms. The project is being executed and monitored by Bihar Government as per the schedule incorporated in the agreement. As per information furnished at the time of annual plan discussions for 1983-84, expenditure till the end of 1981-82 was about Rs. 33 crores. During the year 1982-83, about Rs. 19 crores were expected to be spent.

BOOKS

Knowledge a Monopoly

CREATING KNOWLEDGE : A MONOPOLY ?—Edited by Budd Hall Arthur Gillette and Rajesh Tandon. Published by Society for Participatory Research in Asia, New Delhi. First published : June, 1982, pages 209; price not mentioned.

PARTICIPATORY research is seen as a contribution to the development of poor and common people. It is feared that traditional methodologies of research in social sciences do not support development of the people as the consequent generation of knowledge is, by and large, monopolised by a few trained professionals. If research is intended to play an increasing role in the development of new strategies of control, it must provide both an alterantive analysis and a means of expanding the base of analysis to include most exploited sectors of society.

A view like the aforesaid runs through the various chapters contributed by knowledgeable people in the field of social sciences. The focus is on adequacy of the tools of empirical social science for bringing about fundamental transformation of society. As a result, it has become easy, rather fashionable, to slip into intricacies of increasingly sophisticated control of variables at the expense of solutions of real social problems. The contributors of articles in this publication commend the method of participatory research in order to emphasise the necessity to involve those persons who are the supposed beneficiaries of research in the entire research process.

The book is organised in three parts of which the first one presents five theorefical papers on different aspects of participatory research. The second part contains seven case studies from different parts of the world, varying in context, content and style. The last part deals with a reaction to the papers and cases presented in the earlier parts. Written in a simple style, without verbosity and jargons, the book will be helpful in understanding the mechanics and motivation for research in any area of social sciences.

Navin Chandra Joshi

Modern Indian Literature

Literature of Modern India; Krishna Kripalani; National Book Trust, India, New Delhi pp. 124; price Rs. 10.50.

A SLENDER volume true to the candid and clear-cut reservation of the author, manifested in his brief foreword, it does not go beyond providing a panoramic survey of the literature of modern India as a whole". It is, therefore as synoptical as could be and has to be viewed as such.

One feels all veneration for the author, for his tremendous scholarship, for his literary verve and veracity, for his peculiarity of vivid style in English prose. At the same time one feels the conspicuous absence of publisher's intent and purpose. Thhat is why, as a revised edition of the original published in 1968, the volume is not indicative of the revision effected in the true sense of the term, particularly when the select bibliography shows very few books relating to post 1968 period which the author is supposed to have depended upon.

The introductory not is a brief but eloquent piece. The lay-out of the study is topical and not on linguistic pattern. Indigenous trends and trials, historic, heritages, foreign influence, have been duly alluded to. Literature of certain languages has been adequately represented. This approach is, however, missing in the case of Urdu language despite its all India character and very popular literature. Chapters on the "contemporary scene" and "summing up" are just fringy and notes of inklings.

To the extent of its limited exposition of the over-all literary scene the volume is readable. It is a well produced volume for a small price.

R. Prakash

Water Management Problems

Land and Water Management Problems in India; Second Edition, by B. B. Vohra, Training Division, Department of Personnel and Administrative Reforms, Ministry of Home Affairs, 1982.

THE need for proper land and water management for increasing producivity on a continuing basis to sustain a growing population in a decent way has been felt since long. But it is only during the last decade much attention was given to developing a large volume of literature and setting up of a number of specialised organisations to deal with the problem of land and water management. However, there are still wide gaps between the actual problems and their understanding the need for proper land and water management and the efforts put in to achieve the required target. The author through his writings and lectures spread a little over a decade tries his best to analyse the problems and their causes and the possible consequences of not tackling them. He also suggests remedial measures that should be taken for minimising the problem.

In his penetrating analysis the author shows that three quarters of non-agricultural area lie practically useless. So far as agricultural lands are concerned, over three-fifths are degraded to a greater or lesser degree. Although there is no firm estimates of the water logged area, he presumes that about 10 million hectares are water logged and are threatened by salinity needing urgent attention. He feels that "our situation can indeed be compared to that of a leaking boat into which more and more people keep climbing even while, unknown to its occupants, the hole in its bottom goes on increasing in size."

The importance of top soils, the period taken for its constitution and the loss due to various forms of erosion are depicted in a manner which unfolds itself like a motion picture before a reader. The causes for denudation of forests are given in detail. The author quotes the figure of National Commission on Floods regarding the colossal damages' caused by the floods (though the estimates made by the National Commission on Floods are overestimates as pointed out by this reviewer in one of this papers, yet it shows that the losses are quite high). His suggestions for fishery development in heavy water logged areas and to put the degraded and eroded land in catchment areas under coarse grass or shrubs are very practical and useful. The author is extremely frank in his opinion and ruthless against the corrupt bureaucracy. He points out that "the forest departments have by and large, been much too friendly towards financially and politically powerful contractors responsible for illegal fellings. At the same time they have not shown sufficient concern over the increasing denudation of forest and pasture lands. Public cooperation is a vital need for successful implementation of any plan programme. As such a public relation compaign to educate the people for proper land and water management is absolutely necessary and very urgently required."

The author rightly points out that sometimes the well intentioned plan programmes are not necessarily well conceived ones. Because of this the plan programme in a number of cases do not succeed. He says the well-intentioned suggestions which are made every now and then that "forest lands" and "waste lands" should be distributed among the landless in the interests of increased production, are based on a crass ignorance of the basic fact that most such lands cannot be easily put to agricultural use."

The book provides wealth of experience of the author. It is highly useful for researchers and administrators. It is an extremely useful edition for the purpose of training. It is recommended that the book should be publicised in States and Union Territories, so that those who are interested in rural development gain adequate knowledge in land and water management.

Dr. D. Tripathy

Role of Women in Freedom Movement

INDIAN WOMEN'S BATTLE FOR FREEDOM
Kamaladevi Chattopadhyay. Abhinav Publications, pp. 134, Rs. 45.

IN the book, the author attempts to "fill up a vacuum". She attempts to place before the readers the role played by women in the social reform movement in India. The span covered is from late 19th century to the pro-independence period.

The book has been divided into three chapters. The role of women and their position in society from the earliest times to the period of the study, forms the first chapter. The second chapter—the main body of the book—traces the participation of women from the first steps at social reform to the time of independence and after. The third chapter deals exclusively with the legal rights demanded by women from inside and outside the Government. Women's participation in the struggle for reform is brought out mainly through the working of the All India Women's Conference.

The author has brought out very well the status of women in earlier times, the determination of her position in the later Aryan (300 B.C.) to her final fall as an appendage of man with no identity of her own. Throughout the narration of the reform movements, the one fine point the author has made is that though the initiative for reforms came from men, the women were the mainstay. They derived their strength from the handful of heroic women who fought for their rights, despite hostility from their own sex. The author also stresses that women fought for the termination of social evils as a necessity for the development of society as a whole, in her words a "total" society.

The third chapter is especially interesting. At every stage for political and social reforms through legislation the women wanted to be treated as women and not be differentiated as Hindus, Muslims or Christians. They demanded a common code of law. At no stage did they want any special privileges. They wanted to be treated as "people" with all the rights and duties given to any citizen.

Though this book is a significant beginning in the study of the role of women in our recent history, it falls short as an authentic record. The absence of bibliography is a draw-back. The author makes statements like "Individual women had gone into action even before organisations were thought of", but does not give evidence to substantiate the statements. It is revealing that during the period covered by the author, the struggle for women's liberation was entirely for reform through legislation of so it would appear from what the author says. It is apparent, however, that women's liberation has many facets and legislation is only one of them. The book provides an important missing link in the history of reform in our country.

R. Prabha

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"Much has been said about labour relations. I would put one basic approach to that problem. You object to tribunals and their functions. Then what are we to have? Are we to leave matters to the internal conflict between labour and capital, to which [illegible] the rest? Long ago, about twenty [illegible] years ago, I was President of the Trade Union Congress. [illegible] I have been in touch with [illegible] and understand [illegible] psychology somewhat. I do not approve of [illegible] set up or of attempts to [illegible] the trade union movement [illegible] employers or others. It is [illegible] organised disciplined [illegible] trade union world. [illegible] function rightly. Wrong [illegible] methods. [illegible]

[illegible] on the basis of our economic structure [illegible] the [illegible] If the tribunals and conciliatory processes do not function rightly, let us improve them. But it has to be recognised that the alternative is conflict, which is bad, and which will ultimately result in upheavals and the breaking up of the whole economic structure."

(Excerpts from the address to the Associated Chambers of Commerce, Calcutta 14-12-1953)

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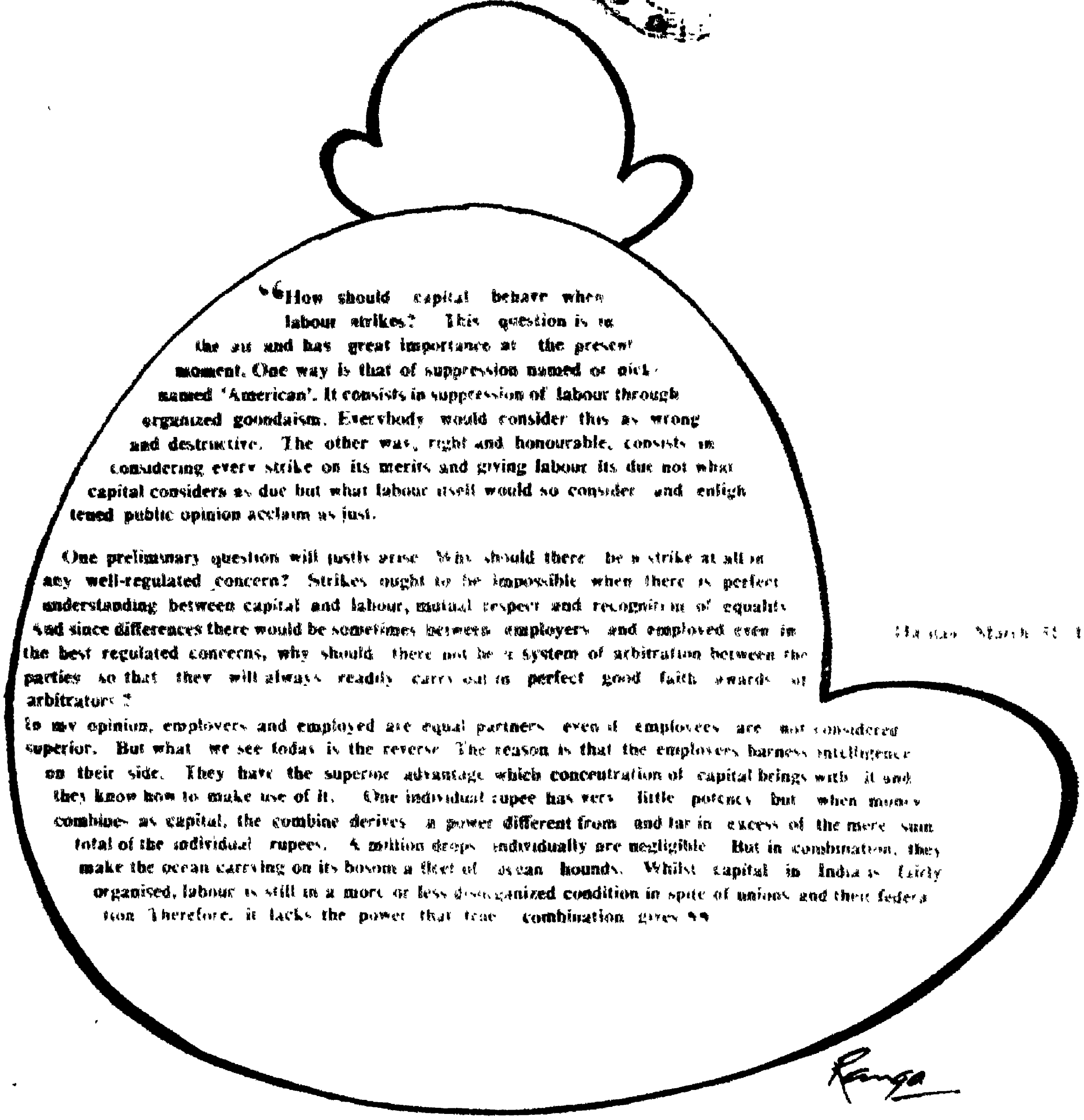

"How should capital behave when labour strikes? This question is in the air and has great importance at the present moment. One way is that of suppression named or nicknamed 'American'. It consists in suppression of labour through organized goondaism. Everybody would consider this as wrong and destructive. The other way, right and honourable, consists in considering every strike on its merits and giving labour its due not what capital considers as due but what labour itself would so consider and enlightened public opinion acclaim as just.

One preliminary question will justly arise. Why should there be a strike at all in any well-regulated concern? Strikes ought to be impossible when there is perfect understanding between capital and labour, mutual respect and recognition of equality. And since differences there would be sometimes between employers and employed even in the best regulated concerns, why should there not be a system of arbitration between the parties so that they will always readily carry out in perfect good faith awards of arbitrators?

In my opinion, employers and employed are equal partners even if employees are not considered superior. But what we see today is the reverse. The reason is that the employers harness intelligence on their side. They have the superior advantage which concentration of capital brings with it and they know how to make use of it. One individual rupee has very little potency but when money combines as capital, the combine derives a power different from and far in excess of the mere sum total of the individual rupees. A million drops individually are negligible. But in combination, they make the ocean carrying on its bosom a fleet of ocean hounds. Whilst capital in India is fairly organised, labour is still in a more or less disorganized condition in spite of unions and their federation. Therefore, it lacks the power that true combination gives."

Harijan, March 31, 1946

Ranga

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What government does
to arrest
Labour unrest

VOL. 27 NO. 9

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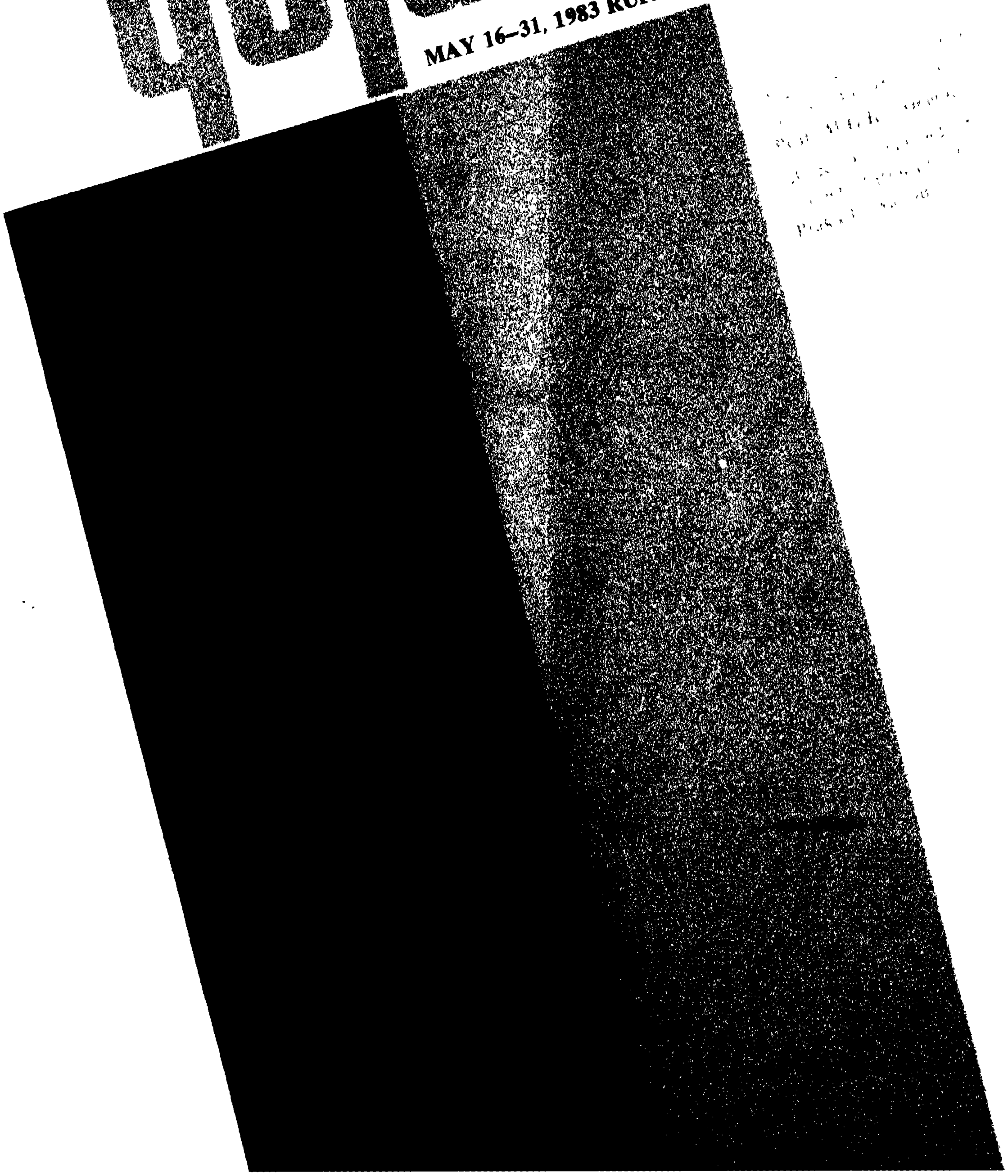

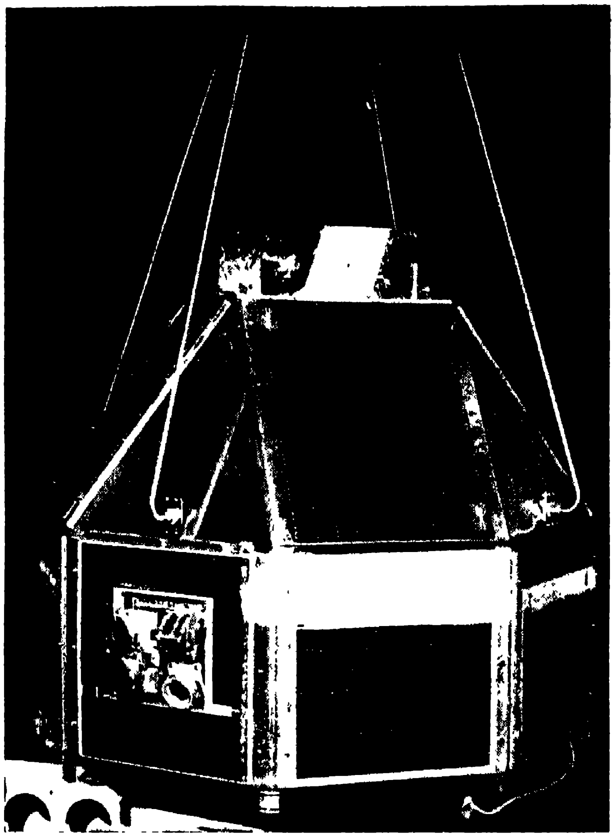

Rohini in orbit

INDIA's second developmental flight of SLV-3 blasted off with a thunderous roar from the launchpad at Sriharikota around 11 a.m. on April 17, 1983 and put a 41.5 Kg Rohini Satellite RS-D-2 into an elliptical orbit. This was a fitting climax to 18 months of preparation in building the rocket and satellite that established the country's expertise in developing launch vehicles which can inject a 40 Kg satellite in a near earth orbit.

The launch was witnessed by the Prime Minister, Smt. Indira Gandhi. She told pressmen : "It is a matter of pride for all Indians, pride for the scientists, technologists and all those who have been working on this project and in other scientific projects all over the country".

This flight is the fourth in the SLV-3 series. The first experimental flight took place in August 1979. The second experimental flight in July 1980, placed the 35-Kg Rohini satellite RS-1 in near-earth orbit. The first developmental flight of SLV-3-D-1 placed the Rohini Satellite, RS-D-1 carrying a landmark sensor in May 1981.

The SLV-3-D-2 in addition to the now improved fourth stage, carried several new indigenously developed sub-systems and components. It is fitted with a two band solid state camera called SMART Sensor. The camera helps produce better quality pictures with more contrast. Based on the orbital date received so far, the

(Continued on cover III)

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What government does to arrest labour unrest

In our last issue (May 1-15) we carried the critique "why labour unrest", done by two very prominent representatives of Labour and Capital. The authors did take, Government to task for, what they think its failings : Here with this article from the Union Labour Ministry, outlining a series of measures in the last few years to improve the industrial relations situation in the country, we give finish to the scenario——Editor.

KUMARI MIRA SETH

THE INDUSTRIAL RELATION situation in any country is in a state of fluidity which is seeking a point of equilibrium. This point of equilibrium cannot be stable for any length of time because of the very nature of industrial relations.

In India the industrial relations situation can be judged from the statement carried with the article, which shows the industrial relations situation within its broad programmes for the period 1970 to 1982. It indicates that the total mandays lost in 1971 were 16.55 million and they rose upto 21.93 million in the year 1980 whereas, the year 1981 showed a loss of 36.58 million mandays and in 1982 the mandays lost upto October amounted to 23.35 million mandays excluding the figures of loss of Bombay Textiles strike. This statement is instructive in many ways. It indicates that over the past decade, the number of mandays lost comes to almost an average of 27 million and it has two peak years of 1974 and 1979 where the figures have risen above 40 million. This statement also shows that the percentage share of loss of mandays is more in the state sphere and the private sector than the central sphere and the public sector, although the two are not synonymous Another significant feature is that strikes have amounted to an average loss of 61.8 per cent as compared to 28.2 per cent lockouts.

The Government obligation

In a developing country like ours and with the specified goal of the establishment of a Welfare State, the Industrial Relations Laws of the land laid down a significant position for the Government as far as handling of the industrial relations situation is concerned. The Government is responsible for the setting up of the conciliation and adjudication machinery and for overseeing that a certain amount of egalitariaon treatment is meted out to the employers and the workers and the interests of the weaker sections of the society are specially looked after When the employers and workers come into a state of confrontation, it is necessary for the Government to enter into the fray in order to find a solution for industrial disputes and also to try and resolve them as quickly as possible because a developing economy like ours cannot afford the luxury of prolonged industrial strikes affecting production and leading to the chain of scarcity, price rise and further frustration in the community.

To discharge the obligations laid down on the Government, both the Central and the State Governments have taken a series of measures in the last few years to improve the industrial relations situation in the country The first step that has been taken is to set up a Monitoring Cell in the Ministry of Labour where the strikes and lockouts situation as well as disputes likely to occur are monitored every day through a system of reportage from the field. This Cell can predict the on-coming possibility of big industrial disputes and industrial action in the form of strikes and disputes and alerts the Government to start its procedures of formal and informal mediation The State Governments have also set up Labour Cells to oversee the industrial relations situation.

Settling disputes quickly

The Central and the State Governments have also strengthened their conciliation and adjudication machinery so as to ensure a more expeditious settlement of industrial disputes. The Organisation of the Chief Labour Commissioner (Central) has been strengthened by the creation of 17 additional posts of Assistant Labour Commissioners (Central) and 3 posts of Regional Labour Commissioners (Central). In addition to these, 8 posts of Labour Enforcement Officers have been created. As far as adjudication machinery is concerned, the Government has set up a new Central Labour Court at Chandigarh and is examining the need for setting up another Tribunal in Delhi. The State Governments of Assam, Bihar, Gujarat, Karnataka, Kerala and Uttar Pradesh have set up additional Labour Courts/Industrial Tribunals. Most of the other State Governments are also considering the setting up of additional Labour Courts.

The Central and the State Governments are also reviewing the pendency of cases in Labour Courts/

Tribunals at regular intervals and norms have been fixed for the disposal of cases by these courts by many Governments. Government of India had set up a Committee to examine the need for amending the Central Industrial Relations Rules with a view of expediting decisions by Labour Courts. The State Government Maharashtra had set up a Committee to go into this question as far as their State is concerned.

The Central Government has also over the last three years held a series of tripartite meetings both with employers and trade union organisations with a view to finding out the solutions of controversial issues affecting the state of indusrtial relations in the country. As a result of these consultations, the Government had introduced three important Industrial Relations Bills in the year 1982. The Industrial Disputes (Amendment) Act, 1982 which has been passed contains very important provisions for speeding up the disposal of industrial disputes as well as enabling the Government to take action against unfair practices of both employers and employees. It has now been made obligatory by the Government for employers having more than 50 workers to set up Grievance Redressal Committees where an effort would be made at bipartite settlement of disputes between employers and workman as soon as they arise. The conciliation machinery has been given greater power in order to summon parties and for the production of documents. The Act has further laid down that all individual disputes referred for adjudication to Labour Courts|Tribunals will be decided within a period of three months. As far as collective disputes are concerned, the Government can also specify the time limit during which these disputes should be settled.

Guidelines for trade unions

The Trade Unions (Amendment) Bill, 1982 has made an attempt to lay down certain broad guidelines for the functioning of the trade unions. The Government would have greater powers to verify the membership of trade union organisations. Trade unions can only be formed by registration by workers themselves Here a minimum of 10 per cent subject to 100 workers working in an undertaking or in an industry would in future by able to form a trade union. The percentage of outsiders as office bearers of trade unions is also proposed to be reduced from 50 to 25 per cent. The Bill has taken a significant step inasmuch as, for the first time in the history of the Indian Trade Union Movement a machinery is being provided in the Bill itself for the solution of the inter-union and intra-union disputes.

Government has also recognised the need for giving separate treatment to hospitals, educational instituions, research organisations and a few related categories from the treatment which is meted out to 'industry' in the Industrial Disputes Act, 1947. The Hospitals and other Institutions Bill, 1982 proposes that the institutions covered by this Bill will have Bipartite Grievance Redressal Machineries which it is hoped would lead to the quick settlement of disputes.

The Industrial Employment (Standing Orders) Act, 1947 was also amended in 1981. It seeks to give better service conditions to workmen.

The process of legislation is, however, a continuing one and though the Government is attempting incremental change, it is very conscious of the need for taking further legislative steps to solve the most controversial issues which have affected industrial relations situation in the country. The most important among these issues are the need for having a new administrative structure for dealing with industrial relations in the country, the method of verification of the strength of trade union organisations, the need for having sole collective bargaining agents and many other connected issues. Although the Government had during the last three years held several discussions with the employers and trade unions on these issues, no satisfactory solution could be arrived at. In order to make a final effort at settlement of these issues, a National Labour Conference to which the major Central Trade Unions, Employers Organisations and State Governments were invited was held in September, 1982. This conference made important recommendations on these issues and further set up a Sub-Committee under the Labour Minister of Gujarat for going into the subject in greater depth. The sub-committee had submitted its report this year and the Government is finalising action on this Committee's report in consultation with all concerned interests.

Workers' participation

The Government has all along used the promotion of Workers' participation schemes as an instrument for bringing harmony in industrial relations. Workers Participation Schemes exist in India from 1947 onwards, when Works Committees were laid down in the Industrial Disputes Act, 1947. Joint Management Councils were introduced in 1958. In the subsequent years, Workers' Directors have been introduced in the Banks and comprehensive Workers' Participation Schemes introduced in 1975 and 1977 in the manufacturing, mining, commercial and servicing sectors. The Government has further reviewed and is seriously considering as to how these schemes working of all Workers' Participation Schemes can be made more comprehensive and effective in their functioning.

The Government has also taken a series of steps to cover the extension of the Employees State Insurance and Provident Fund Schemes to larger areas. An increasing number of welfare activities have also been worked out for the unorganised sector of industry with the primary emphasis on provision of medical, housing, educational and recreational facilities. Creches for women workers although, statutorily provided are coming in for increasing review by the Government with a view to improving and extending these facilities.

It is hoped that along with the constant involvement and desire of the Government to promote industrial harmony the trade unions and the employers organisations which are the two other main factors governing the health of the industrial relations would respond in an equally positive and forceful manner so that we have industrial harmony which will lead to increasing productivity and prosperity for the people of our country.

STATEMENT I

Statement showing the total number of Mandays lost (in Million) due to Strikes and Lockouts in Public and Private Sectors and Central and State Spheres for the years 1971—1982

Year	Total number of mandays lost (in millions)								
	Strikes	Lockouts	Total	Public Sector	Private Sector	Total	Central Sphere	State Sphere	Total
1971 .	11.80 (71.30)	4.74 (28.70)	16.55	2.25 (13.60)	14.29 (66.40)	16.55	1.93 (11.66)	14.61 (88.34)	16.55
1972 .	13.75 (66.92)	6.80 (33.08)	20.54	3.35 (16.31)	17.20 (83.69)	20.54	1.80 (8.76)	18.74 (91.24)	20.54
1973	13.36 (67.21)	6.76 (32.79)	20.63	3.39 (16.43)	17.28 (83.57)	20.63	2.92 (14.15)	17.70 (85.85)	20.63
1974 .	33.64 (83.56)	6.62 (16.44)	40.26	13.09 (32.51)	27.17 (67.49)	40.26	11.36 (28.22)	28.80 (71.78)	40.26
1975 .	16.70 (76.26)	5.20 (23.74)	21.90	2.15 (9.81)	19.75 (90.19)	21.90	1.55 (7.08)	20.35 (92.92)	21.90
1976 .	2.80 (21 96)	9.35 (78.04)	12.75	0.87 (6.82)	11.88 (93.18)	12.75	0.37 (2.90)	12.38 (97.10)	12.75
1977 .	13.41 (52.96)	11.91 (47.04)	25.32	4.47 (17.65)	20.85 (82.35)	25.32	2.63 (10.39)	22.69 (89.61)	25.32
1978 .	15.42 (54.41)	12.92 (45.59)	28.34	4.35 (15.35)	23.99 (84.65)	28.34	2.98 (10.52)	25.36 (89.48)	28.34
1979 .	35.80 (81.64)	8.05 (18.36)	43 85	7.66 (17.46)	36.20 (82.54)	43.85	3.17 (7.23)	40.68 (92.77)	43.85
1980 .	12.02 (54.79)	9.91 (45.21)	21.93	4.13 (18.84)	17.79 (81.16)	21.93	2.16 (9.85)	19.76 (90.15)	21.93
1981 (P) .	21.21 (57.94)	15.38 (42.06)	36.58	10.07 (27.50)	26.52 (72.50)	36.58	3.03 (8.30)	33.55 (91.70)	36.58 5
1982PP* (Jan.-Oct.)	11.00 (41.10)	12.35 (52.90)	23.35	9.97 (12.70)	20.39 (87.30)	23.35	1.64 (7.00)	21.71 (93.00)	23.3

P—Provisional and based on returns recieved in the Labour Bureau, Simla till 31-8-1982.

PP—Provisional and based on returns received in the Labour Bureau, Simla till 18-12-1982.

*—Does not include mandays lost due to textile strike which is estimated at 48.67 million upto September, 1982.

N.B.—1. Figures in brackets give the percentages to total mandays lost during the year.

2. Total may not necessarily tally due to rounding of figures. Source : Labour Bureau, Simla.

Green belt for Trivandrum

THIRTY-FIVE HECTARES of land from private owners have been adopted for the green belt scheme in Trivandrum.

This pilot project hopes to adopt cultivable lands adjacent to houses, backyards and fields of the private owners and offering them to farm workers to produce vegetables, fruits, tapioca, coconut and arecanut.

These cultivators are given green cards which entitle them to get technical assistance from the agricultural department of the Kerala Government. Their produces are collected at specified centres for a reasonable price. A bonus of 25 per cent of the total sale of their produce awaits these cultivators annually.

In Ullurkonam near Srikaryam, 3.5 acres cultivable land of a private owner was adopted by the Agricultural Department and given to identified cultivators who grow paddy, tapioca, coconut, arebanul and vegetables. The vegetables grown here are used by the cultivators themselves.

Thankappam and Kuttappam, two of the farmers here, are experts in growing vegetables. Both of them have been able to convert their 3.5 acre plots into lush green farms within a short while. After some years, the coconut palms will yield about 2000 nuts a year. On tapioca alone one can make a profit of Rs. 1,000|- a year. Vegetables like peas, bitter gourd, and snake gourd are grown with care.

Thankappam and Kuttappam are landless labourers working in fields for daily wages. When work is not available, the green belt scheme keeps them busy and the additional income keeps them from feeling the pinch of want.

Fifteen hectares in Kazhakuttom, ten hectares in Malayinkizhu, and ten hectares in Pembayum have been covered under this green belt pilot project. It helps to improve the environment with social and farm forestry, and also offers employment to the landless farmers in this area.

Advances in science and technology Consequences and implications

We should take keen interest in the up-and-coming younger generation and imbuing it with a spirit of idealism, dedicated work and enthusiasm. It is that generation which can adapt itself most easily to the great transformations that are taking place in society, and the rapid developments in science and technology. But what are we doing for this generation, asks the author.

PROF. M. G. K. MENON

Mankind moved four decades ago from energy releases measured in electron volts, characteristic of chemical reactions, to energy releases a million times larger, characteristic of the nuclear processes. It was unfortunate that this leap-forward was ushered in with the atomic bombs dropped over Hiroshima and Nagasaki; a spectre that has hung over humanity ever since then. With the nuclear stockpiles that exist, it is possible to cause damage on such a catastrophic scale as to endanger the very survival of civilisation. As our Prime Minister, Smt. Indira Gandhi, said in her Inaugural Address to the Seventh Non-aligned Conference held recently in New Delhi : "The hood of the cobra is spread. Humankind watches in frozen fear, hoping against hope that it will not strike. Never before has the earth faced so much death and danger". The breakdown of social organisation and the magnitude of casualties would be so large that no medical system could be expected to cope with more than a minute fraction of the victims. Radioactive fall out will be a global phenomenon. Its aftermath will involve far larger numbers than those subjected to a nuclear attack. These dangers have been focussed upon and publicised at many forums. However, I find that the social conscience of our scientific community has not been awakened in this regard. By and large, we continue to be blissfully ignorant or insensitive to the valcano on which we are sitting. India has, since Independence, played a positive role concerning the need for peace, and argued strongly for disarmament, particularly nuclear disarmament; the initiatives in this regard have been largely at government level, stemming from the initiatives taken by Jawaharlal Nehru and more recently by Prime Minister Smt. Indira Gandhi. It is in my view very important to build greater awareness in India, and other developing countries, about these dangers of a nuclear holocaust; and the scientific community has a particularly important role to play in this.

Spectacular Advances

We have seen in the past 25 years spectacular advances in the field of space technology; these have given rise to major capabilities in the areas of communications, remote sensing, meteorology, and broadcasting, which would enable developing countries like India, if one can properly manage these capabilities, to leap forward in many sectors such as agriculture, forestry, climatology and weather prediction, disaster warning, natural resources survey, education, national integration, and so on.

We have made a good start in this field; and must realize the capabilities that have come into existence must be seized if we are to make rapid advance rather than progress along the beaten track.

Information Age

Over the past few decades electronics has become all-pervasive, particularly through discoveries in solid state electronics, and their applications in the fields of computers, communications and consumer electronics. We live today in what is often referred to as "Information Age".

Instrumentation is assuming increasing importance in scientific research, in industry and indeed many aspects of daily life. This is particularly so with the advent of a whole host of new transducers, and capabilities in microelectronics and microprocessors, which have opened up new areas of measurement and converted most instruments into "smart instruments". This can be seen in the host of new capabilities now becoming available to medical science.

An illustration of the nature of the great transformation that has been brought about through computing capabilities is the area of computer-aided tomography. In this, the powerful physical technique of x-rays, which had earlier existed, was married to computing capabilities in a special manner, to look for phenomena in the brain which would otherwise not be discernible. The CATSCAN is now a technique in regular use, of great value.

In general, the consequences of the present developments in the field of computing are beyond our imagination; I can only state that we can now ask questions of a complexity that would have been out of question even five years ago. An interesting aspect of this field is the ability of the young to come rapidly and easily to terms with these capabilities.

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*Extract from the convocation address at the 21st Annual Convocation of National Academy of Sciences (India,) Madras, March 18, 1983.

Great discoveries in life sciences

There are many other areas where important advances have been taking place. Great discoveries continue to be made in our understanding of the micro-structure of matter, and the fields and forces that are concerned this is the area which has been of interest to me in my research. Our knowledge and understanding of the macrocosom that surrounds us the universe and the myriads of fascinating objects and phenomene seen in it has greatly moved forward. In the field of chemistry the range of contemporary interest is very wide; spectacular developments have taken place, often based on powerful new sophisticated methods of analyses and through the use of computers. We have innumerable common place items where scientific discovery and application have resulted in artefacts that are now part of daily life and have transformed the world around us in radical fashion.

It is clear that spectacular advances are taking place, on a wide variety of fronts, some with great hope of a bright future, others holding the spectre of total destruction, and yet others where the future cannot be properly judged.

Age of biology

And yet there is one area of advance that I have not yet referred to, of great significance for humankind, and of particular relevance to you : the discoveries in life sciences, which lead many to believe that this is the Age of Biology. Man has, in recent decades, probed deep to understand the living state at molecular and cellular levels. Biotechnologies born of this understanding hold great promise, and are poised for development, as was atomic energy in 1945, or space technology in 1957.

Homi Bhabha was quick to appreciate the potential in the field of nuclear energy: and embarked on a major national programme to ensure that India could achieve self-reliance, and derive the fullest benefits from these advances. Vikram Sarabhai equally envisioned the potential of the space age for a country like India to leap forward into the future.

It is the promises of the new biotechnologies that led the Government of India to set up the National Biotechnology Board, with the hope that activities over a wide spectrum, on a multi-institutional and multi-agency basis will be initiated, so that India can be ready in terms of manpower and competence, as well as infrastructure and production facilities to utilise the unfolding potential of this field in the many areas of agriculture, health and industry.

Milestone discovery

It would be of interest to recall the transformations that have taken place in this field in just a matter of a few years. After the Second World War there were major developments in studies relating to complex biological molecules. Structures of haeomoglobin, Vitamin B 12, insulin, collagen, etc. were determined using the tools available from physics and chemistry, principally X-ray crystallography. A milestone discovery related to the structure of DNA and the genetic code. Whilst exciting work continued for almost two decades at regular laboratory level, with a stream of understanding pouring out, it was during the late 1970s that techniques became available for rapid analysis of complicated bio-molecules. By 1978, a computer "protein atlas" had been written, containing the amino-acid sequence of more than 500 proteins. Soon afterwards it became possible for a scientist to determine the sequences of 200 amino-acids in a single day and to determine the sequence of 1000 of the nucleotides which form DNA in one week. The first gene was synthesised in 1964, but it is only during 1978-79 that it became possible partially to synthesise the genes responsible for the production of insulin and the human growth hormone. This became possible with the discovery of enzymes capable of cutting DNA at precise sites, of enzymes capable of sealing the loose ends, and of those which could synthesise DNA from messenger RNA. In 1979 it took two years to synthesise a gene with 120 nucleotides and by 1981 the same job could be done by a machine in three days.

There are many exciting implications of this work : the synthesis of insulin, somatostatin and human growth hormone; of interferon which could be of significance as an anti viral and anti tumour agent; production of chemicals potentially suitable as vaccines, for example against the hepatitis B virus, and a protein characteristic of one of the foot-and-mouth viruses etc. These techniques could result in production of essentially pure products, free from toxic effects, reducing long and costly toxicity tests. These techniques should enable small quantities of the DNA or the RNA of an invading virus to be isolated, mapped, sequenced and replicated. In agriculture it may be possible to transfer nitrogen-fixing genes of certain bacteria to certain plants, as also transfer to a number of different crops specific genes responsible for improved yield or pest resistance; and there are many other applications in industry.

I have mentioned all this only because I am convinced of the great potential inherent in these new developments. It is vital that our scientific community become increasingly aware of this potential and rise to the occasion to take the fullest advantage of this.

National Health Care and Delivery Systems

We have a rich heritage in medicine going back to more than 2000 years. The philosophy and the science of Ayurveda and the surgical skills, as enunciated by Charaka and Sushruta, stand testimony to a long and glorious tradition in the care of the health of our people. Traditionally, the Indian approach to health care has been of a holistic nature, and takes into consideration all aspects of human health and disease. Many of the indigenous ideas and technologies that exist should be carefully looked into as they could well be fertile starting points for major new approaches. However, over the past few decades the holistic concept of medicine and medical care has been fragmented and the thrust is on treatment of disease as it appears, or prevention of disease on a specific basis; the concept of health tends to be ignored. In recent years, elsewhere in the world, there has been healthy growth of what used to be called whole animal and whole plant biology—in contrast to the emphasis on molecular structure of living systems or what stems from the approach of a physicist to look at the smallest structure where precise details can be worked out. We need to understand complex biological functioning as a whole—and particularly the synergestic and catalytic elements in functioning. The Academy can play a vital role in ensuring that medicine and medical care retains a comprehensive character. Health care, unless comprehensive in nature, will never be able to achieve the desired goals and prove to be too expensive.

To those who would decry our efforts in the field of medical care, I would like to present the following facts relating to our successes :

> We have been able to successfully wipe out the scourge of small-pox from our country; this has been the success of prophylaxis and of the health management system. Death rate, in the last 3 decades, has been reduced to half from about 30 per thousand in the early 50s to 14 per thousand today. We have been able to reduce infant mortality to 125 per thousand live births. Inspite of the reduction, we must accept that what we have is a very high infant mortality rate and we have to reduce it further; we have set a goal for reducing it to 60 per thousand by the turn of the century. Average expectancy of life has increased from 32 years in 1950 to about 54 years in 1983. Plague is no longer a problem. Malaria has been brought under control to a considerable extent, though there has been a resurgence in recent years, but nowhere near the earlier situation : Substantial indigenous capacity has been established for the production of the drugs; though I am sorry that our policies have of late resulted in scarcity of drugs, increased imports of even the most basic ones, loss of markets abroad that our industry had captured, and slackening of tempo in our scientific thrust towards self-reliance and indigenisation. A large infra-structure of trained health manpower at various levels has been created and a vast network of health institutions has been built up.

Health picture—a concern

Inspite of such impressive progress, the health picture of the country today is a cause for serious concern. The mortality rates, particularly of children and women, are distressingly high. It is disheartening to note that more than a third of the total deaths occurred in children below the age of 5 years. The extent and severity of medical malnutrition is alarmingly high; and, in fact, has not shown much improvement. Hardly 10 per cent of our rural population has access to safe water supply and less than 2 per cent enjoy basic sanitation. Diseases of the gastro-intestinal tract in infants and children, with other preventable communicable diseases, acting against a background of malnutrition, are the principle causes of high infant child mortality. One fifth of the total blind population of the world is believed to be in India : the major causes are cataract, trachoma and other infections, and malnutrition. Diseases arising from poverty, ignorance, malnutrition and poor environmental sanitation are still highly prevalent.

The reasons for this situation are not far to seek. The wholesale adoption of the health care delivery systems, including of manpower development, based on the western models has proved inappropriate to the socio-economic conditions existing in our country. There has been an excessive pursuit of the disease-oriented and hospital-based approach for the privileged few to the detriment of providing comprehensive health care constituting promotive, preventive, curative and rehabilitative services for the many. It is clear that there are formidable problems that we have to face in the health field in the country.

High cost of medical treatment

A serious dimension to the existing situation relates to the very high cost of medical treatment due to increase in the cost of drugs and hospitalization which makes medical care more and more beyond the reach of majority of our people. Some experts say that it costs Rs. 2 lakhs per bed, or even more, in a good modern hospital, exclusive of the cost of land. This would mean a capital outlay of Rs. 28,000 crores on a minimum national basis. Should our hospitals be so expensive ? There are solutions to all problems. The solution to this problem will lie in our effort to create conditions which could decrease the necessity for prolonged hospitalisation and drug administration. The domiciliary treatment of tuberculosis was a step in this direction. Promotive and preventive health care programmes will go a long way to solve this problem. This calls for an integration of preventive, promotive and curative health services at all levels of health care. The medical profession has to apply its mind on an urgent basis to a cheaper health delivery system. We today have all our resources going into cement concrete, steel, aluminium, glass, expensive drugs, with the problems compounded by poor management. Often one sees the equivalent of the saying in Malyalam : "We observe Onam a (festival) when we have, or Ekadashi (a fast) when we don't"; but please remember that there is a middle way also.

The health programmes in our country, by and large, have failed to involve the people actively to build a self-reliant community. On the other hand, the system has tended to enhance dependency, and weaken the community's capacity to cope with its own problems. A cultural gap exists between the health personnel and the people. To my mind, the cherished dream of achieving and attaining the "Health for All" by the year 2000 A.D. cannot be achieved without the active cooperation and support of the medical sciences community.

We have set a goal for ourselves to reduce the birth rate from the existing about 32 per thousand to 21 per thousand before the turn of the century. We are also planning to reduce the net reproduction rate to one by the same time. This would require that 60 per cent of our eligible couples would be using effective fertility control measures. The present effective couple protection rate in the country, is about 23.7. By the end of the Sixth Five-Year plan, we must raise it to 36 per cent; this would require a colossal commitment on the part of all of us, particularly on the health profession of which you are the luminaries. We need to work on biomedical as well as biosocial aspects of research for population stabilization.

Medical Research

There are many reasons why medical research in India should be supported strongly. Firstly, as in the case of all research, it provides challenges to test the keenest of minds; it is one of the most decisive methods to establish excellence. The second feature is that the genetic stock and societal patterns over long periods of time provide relatively undisturbed samples of population with defined characteristics in many cases. In the tropical environment, the range of living systems encountered is of far greater diversity than in the temparate climates. Great opportunities exist for research on problems in the immediate environment.

Research of high quality had been conducted in this country. Not all of it is well known or well publicised. To cite only a few examples : of these not now in our midst there was the brilliant work of Upendra Brahamchari on Kala Azar and of Rustom Vakil on Rauwolfia serpentina; amongst those still working, we have G. N. Ramachandran, who discovered the triple helical structure of collagen, Avtar Paintal, who has done distinguished work on cardiopulmonary physiology and J. Receptors, and Salimuzzaman Siddiqi now in Pakistan who did the earliest work on the chemistry of rauwolfia. These are only names for illustration, but we have many more. We need to create a sense of unity of our community, with the achievement of one being a source of pride for all of us.

What we have not yet been able to do is to carry through our researches to a determined logical conclusion; nor expand it in ever-expanding waves, building on our Guru-Shishya traditions, to create centres and schools of excellence. Many of our efforts have also not been incorporated into programmes to better the health care delivery in this country. We need to establish close linkages between workers carrying out research in laboratories in many disciplines, clinical research workers, those who are concerned with field and extension work, as also with large scale facilities such as animal houses and toxicological centres, the pharmaceutical industry and administrators concerned with health management. The Academy could play a very important role in trying to bring about these linkages.

The 20-Point Programmes, which was announced by the Prime Minister in January 1982, focuses attention, in our developmental planning programmes, on aspects which are of particular importance to the underprivileged, disadvantaged and economically weaker sections of our society. Four of the 20 points deal with the prevention of disease and promotion of health; and five other points, though not directly within the health sector, are in some way related. The points dealing with health include the areas of family planning, control of leprosy, tuberculosis and blindness, augmentation of universal primary health care facilities, accelerated programmes of welfare for women and children and nutrition programmes for pregnant women, nursing mothers and children, specially in tribal, hill and backward areas. In all of these programmes, fullest support has been given by the Planning Commission in terms of financial allocations. This is also true in health-related areas, such as supply of drinking water, improving the environment of slums, integrated child development services, and so on. As in the case of eradication of small-pox, it is always desirable to define a few programmes, where major efforts can be mounted and tangible results obtained. This is particularly true in a developing economy, where resources, both in terms of money and trained manpower, are scarce.

I would like to place before you what I consider to be one of the most important problems that we face. Those of us who are concerned with functions of this nature, in the running of programmes of government, or administering hospitals, institutions etc., are already those belonging to the older generation. What should be of the greatest interest to us is the up-and-coming younger generation, and how to imbue it with a spirit of idealism, dedicated work and enthusiasm. It is that generation which can adapt itself most easily to the great transformations that are taking place in society, and the rapid developments in science and technology. I ask myself as to what we are doing for this generation. Right from the children going to nursery school, up to those emerging with professional degrees, say in medicine, we put them through a soulless grind for acquisition of knowledge : little children with satchels of books that they can hardly carry, and equally, medical students with tonnes that they can hardly lift. It that education ? The spirit of curiosity, of being able to think, and of enjoying the process of learning is destroyed under this dead weight. There is also very little that is taught concerning any code of ethics and conduct. of one's responsibilities to the community and to society. Is this not an essential part of a medical education, particularly for those bound by the Oath of Hippocrates ?

Very large numbers would deliver their very best with relatively small guidance, encouragement and support; and yet these elements, which cost nothing, are seldom available. The greatest quality of leadership is to raise a younger generation of truly great leaders of the future. □

Rubber Plantations

ABOUT TWO and a half lakh hectares of land are under rubber plantations in our country.

Our annual production is to the tune of 1,50,000 tonnes.

Our annual consumption exceeds production by about 50,000 tonnes.

Kerala, Karnataka and Tamil Nadu are the major producers of rubber.

Rubber has been planted in Andamans and Nicobars, Maharashtra, Assam, Tripura, Meghalaya, Manipur and Nagaland.

The Rubber Board is trying to popularise rubber cultivation and to increase its yield per hectare.

Making tourism more profitable and commercially oriented

We have to improve the data base and the assessment machinery for making inter-sectoral comparisons and industrywise analysis to make tourism and hotel organisations more profitable and commercially oriented.

PRAKASH NARAIN

ECONOMICS IN MOST countries, particularly in the developing countries, are at present under great stress and their overall resources highly inadequate as compared to the total needs of various sectors of the economy. In view of this, any exercise relating to Government support for any particular sector—which would generally relate to public sector allocations or fiscal insentives—tend to become specially difficult and complex.

As far as public sector allocations are concerned, it would perhaps be relevant to mention that in the tourism sector (unlike in some others), they do not play a particularly crucial role. In public sector outlay distribution, the most important element from the tourism point of view is not the allocation to the tourism sector (i.e. the departments of tourism for promotional work or even the public sector tourism corporations in an entirepreneurial role) but the investment in the Civil Aviation sector which as a very high correlation with tourism facilitation. What does a tourist want basically in the country of visit? Perhaps confirmed air bookings, uncongested airports, good hotel accommodation and transport and similar facilities. The queues and delays at airports can be a great irritant to tourists and this has been so in India and in many other countries. Realizing this, in India for example, there has been in the Sixth Plan a relatively sharp step up in the investments in the Civil Aviation sector which has included three major schemes at Delhi, Bombay and Madras, apart from fleet expansion by Air India and Indian Airlines. The total size of India's Sixth Plan showed an increase of 148 per cent over the Fifth Plan. Out of this, Civil Aviation sector showed an increase of 155 per cent as against 131 per cent in case of Railways and 153 per cent in case of roads. It would appear to be logical that the adequacy or otherwise of investments in tourism be seen in totality alongwith the investments in Civil Aviation sector to judge the matter in proper perspective.

Greater tourism sector

This is not to say that allocation in what may be called the "greater tourism sector" i.e including Civil Aviation, is adequate in most developing countries It is perhaps not so—not in India at least, and from what I have seen in the studies made by ESCAP, not in other developing countries of this region either. This is not only because of the resource constraints but also due to inadequate appreciation of tourism as a foreign exchange earner. In most of the countries there is a strong school of thought which—rightly or wrongly—feels that the foreign exchange earnings from tourism are basically illusory and the final benefits from tourism in terms of foreign exchange are not significant. I might hasten to add here that my own assessment is different and it appears to me that tourism is an excellent foreign exchange earner with relatively low investments. Before, however, we can convince others in our respective Governments and organisations many problem of methodology arise, How do we judge the relative position of different export oriented industries as foreign exchange earners? In India, the Finance Ministry and Reserve Bank of India publish certain statistics of gross foreign exchange earnings from different export commodities. Confirmed figures regarding these are available upto 1979-80 and these show that the gross earnings in 1978-79 from tourist arrivals were about Rs. 565 crores, next only to handicrafts (Rs. 967 crores) and engineering goods (Rs. 769 crores). In 1979-80 gross earning from tourism was Rs. 920 crores which was higher than all other commodities, second being handicrafts which earned Rs. 833 crores. However, the problem is that those statistics are not given much importance as they are "gross earnings" figures and do not take into account the expenditure on import of inputs for various sectors and other expenditure requiring foreign exchange outgo. On the other hand, the net foreign exchange earnings for different sectors is not worked out on a regular basis.

Domestic reasource cost

Even after working out the net foreign exchange earnings, a further question arises with regard to the Domestic Resource Cost (DRC) of such net foreign exchange earnings i.e. how much expenditure in local currency was involved in production of one unit of foreign exchange and whether this shows a reasonable ratio or not. Such studies are being done in an ad hoc manner for individual sectors. This perhaps needs to be institutionalised and also to cover all the sectors, not merely tourism, before any worthwhile conclusions are drawn. A further sophistication later could be built into the assessment by incorporating the impact of the multiplier effect in the calculation for different sectors. Further more, within the tourism sector a methodology for prioritization of projects would need to be developed.

These are some of the directions in which improvement in the system of resource allocations to foreign exchange earning activities in the public sector including tourism sector (that is mainly the departments of tourism and public sector tourism organisations) can be effected.

However, it may be added that, despite the resource constraints in India, the India Tourism Development Corporation (ITDC) expect to increase their room availability from 2644 in 1979-80 to 3970 by the end of 1982-83, that is an increase of more than 50 per cent in the first 3 years of the Sixth Plan. It would be relevant to mention that the public sector corporations like ITDC are basically like other entrepreneurs in the field though owned by Government. Their operations are expected to be primarily commercial and are governed by the general policy that public sector undertakings should not only cover their cost but also earn net profit commensurate with the opportunity cost of capital in the country. In the light of this, the Planning Commission and the Government expect these undertakings to raise substantial internal resources to keep the budgetary support low. It is true that quite often public sector corporations, for socio-economic reasons, have to take up projects not fully viable commercially. Ideally there should be a direct subsidy given for this but, in the interim period, if budgetary support to these corporations continues to be heavy, it is expected that budgetary support would be utilised for such promotional projects and the needs of others will be met through their internal resources.

Financial Incentives for private sector

As mentioned earlier, tourism sector is one where private entrepreneurs could legitimately play a big role. What they need is adequate fiscal incentives. In regard to assessment of the position in respect of these incentives also the position is fairly complex. It is true that the fiscal incentives available to the tourism sector are less than in case of many other export oriented industries. Unfortunately there is no fully organised system or methodology for determining the justification and quantum of such assistance. I have already referred earlier, in the context of public sector resource distribution, to the need for a more systematic assessment of (a) Net foreign exchange earnings and (b) Domestic Resource Cost of such foreign exchange earnings in respect of various export oriented sectors of the economy, including tourism. In addition, it must be appreciated that the case for fiscal incentives finally must rest on the "need" for such assistance. It is only if the industry is unable to have reasonable profitability under the existing arrangements, that the need for assistance can be treated as relevant The question, therefore, arises is whether the activity concerned, say, the hotel industry, is earning reasonable profits already or not. If the answer to this is in the negative the position is somewhat simple On the other hand, if the profits are reasonable it does necessarily mean that there is no case for further incentives Then a further question which must be asked and looked into is whether there is enough inflow of fresh investments in the industry to allow for adequate growth For it is possible that existing units constructed earlier at lower land and other costs may earn handsome profits but this may not be true of the newer units. An absence of growth in the sector could lead to adverse effect on the tourist arrivals and would thus not be in national interests In such a situation there could be justification for fiscal incentives irrespective of the profitability of existing units.

Need for Improvement

While, as mentioned earlier, there is need for improvement in the data base and the assessment machinery, to support the decisions in respect of public sector resource distribution and fiscal incentives to various sectors of the economy, including tourism, it may be readily conceded that this would be no ground for inaction by Governments. Better assessment procedures would certainly help in convincing more people more effectively in regard to the course of action and thus arriving at better decisions. But that is true of many aspects of our planning and, in the meanwhile, decisions must continue to be taken. The biggest hurdles in giving additional Government support to the tourism sector at present are, of course, the competing demands from certain critical sectors (like power, oil, irrigation, transport etc.) coupled with lack of adequate resource generation in the country as a whole arising mainly from socio-economic factors resulting in low profitability in various undertakings. It happens quite often that the planners fully recognise the beneficial effects of certain activities but still cannot provide the outlays for those as immediate capital availability is short and deficit financing beyond a point is highly counter-productive. The problem which, then, arises in the context of the resource distribution exercises relates to the identification of sectors which can be pruned. Since many critical sectors take away a large chunk of the outlays and are still severely short of their own requirements, the manoeuvrability with the planners is extremely limited.

Outlay on tourism very low

It is true that the proportion of outlays on tourism in most developing countries is very low. In India's Sixth Plan, for example, it is 0.90 per cent of the total outlay. It is, however, to be appreciated that it is difficult to lay down inter-sectoral relativity only in terms of percentages as the quantum of percentage would naturally vary with the size of the sector. It would, perhaps, be more relevant to see the comparative position of the share for the same sector in relation to the past. Seen in this perspective it may be mentioned that the allocation to tourism sector in India as a percentage of the total national outlay has gone up from 0.16 per cent in the Fifth Plan to 0.19 per cent in the Sixth Plan. Similary, for the Civil Aviation sector, the percentage has gone up from 0.86 per cent in the Fifth Plan to 0.88 per cent in the Sixth Plan. These are perhaps small consolations, but, nevertheless significant considering the extremely difficult situation. In this connection, it would be relevant to note that in a period of exceptional shortage of resources due to various national and international factors, such as the present period, the percentage share of critical hard core sectors in the economy tends to go up on account of certain minimum irreplaceable requirements of those sector It is significant that in India's Sixth Plan increases in the percentage share of tourism and civil aviation sectors was registered depsite the operation of this factor.

(*Continued on page* 27)

Child development still not integrated

UMA JOSHI

CHILDREN's PROGRAMMES have been accorded the highest priority in the Social Welfare Sector of India's Five Year Plans. The Sixth Plan (1980—85) intends to cover more than one crore children under the Integrated Child Development Programme. At present the programme is being implemented in 200 blocks and during the Sixth Plan period the coverage will be 600 blocks. About 1,20,000 pregnant and nursing mothers will also benefit from the programme.

It may be recalled that the Integrated Child Development Services (ICDS) Scheme was initiated by the Planning Commission as early as 1972 in some selected rural/tribal blocks and urban slums with the following objectives :—

1. To improve the nutritional and health status of children in the age group of 0.6 years;
2. To lay foundations for the proper psychological, physical and social development of the child;
3. To reduce the incidence of mortality, morbidity, malnutrition and school drop-out;
4. To achieve effectively coordination of policy and implementation among the various departments to promote child development;
5. To enhance the capability of the mothers to look after the normal health and nutritional needs of the child through proper nutrition and health education.

This Centrally sponsored scheme, with 100 per cent financial assistance from the Government of India, is being implemented by the Department of Social Welfare, Government of India, through the Departments of Social Welfare in the States. Under the Scheme, a network of Anganwadis in the project areas have vastly strengthened the infrastructure for the distribution and delivery of supplementary nutrition of the young child and mother. A great deal of effort has undoubtedly been put in for getting the ICDS projects off the ground. The Anganwadi workers have been appointed and trained in large number. There is an increasing awareness of the potentials of the projects, though with differing programmes and emphasis. However, the experience in implementation, planning and control operations shows that the projects are still facing serious teething troubles. As such, it would be unrealistic to be optimistic about the State of organisation of the scheme till certain basic preliminary tasks are successfully performed.

The Programme Evaluation Organisation of the Planning Commission has in its Report on the State of preparedness of the ICDS (1976) pointed out that there is an inadequate understanding by the project authorities of the inter-sectoral priorities among the different components of the scheme-health, nutrition, and education. There seems to be an over-emphasis on the last of these three items owing to the fact that implementing departments and training institutions have traditionally been dealing with women and child social welfare activities in particular. The report further adds that the training content and choice of institution need to be reviewed in terms of suitability of job training in relation to their job performance.

The pre-primary education for a thin segment of target population of 3 to 6 years is the main activity under the scheme. It is necessary that the much needed health and nutrition components are developed and the various activities under the ICDS receive the right type of attention. This is all the more necessary in view of the fact that the problem of child labour in India has now become more serious and its gravity is quite visible in the project areas. Thanks to the several loopholes in the four-decade old Employment of Children Act, which prohibits the employment of children below 12 years in plantations and those below 14 years in factories, violations of it even in organised sector have gone either unnoticed or unpunished. If child labour is to remain as an important source of labour supply it is necessary that children below the age of five years are adequately looked after in respect of their health and nutrition so that when they work in employment they do not become victims of ill-health or diseases.

In view of the above facts the present number of the experimental projects is quite inadequate. The existing one hundred and odd projects spread over in rural, tribal and metropolitan areas do not sufficiently cater to the needy children in the country.

It is well-known that the major contributory factor for the alarming rise in the incidence of child labour is poverty, which compels the victims themselves to become willing accomplices in the employers' circumvention of the law. Rising rural impoverishment and unemployment have been swelling the ranks of the child labour steadily as families below the subsistence level need the extra income brought in by the children to make both ends meet. The country's child labour force has now reached the dimension of a force to reckon with and probably it cannot be done away with. But until this fundamental problem is tackled successfully it will be difficult to implement other child welfare schemes. ☐

Corporate sector and family planning

In view of the very high priority necessary for the Family Planning Programme, A National Family Welfare Fund must be set up by the Central Government by creating a national trust. This fund should start a massive educational and promotional programme for Family Planning.

HAR GOVIND

THE Federation of Indian Chambers of Commerce and Industry organised a workshop in November 1981 on "Family Planning as a mass movement with particular reference to the Corporate Sector". This workshop identified eleven important areas in which the Federation could play a vital role in motivating its members to plan their families. These areas cover organisational, educational, communicational and financial fields.

Role of Tax Concessions

The implementation by industry and trade of the promotional effort in the 11 sectors indicated by the FICCI workshop requires a high level of expenditure. The object of this article is to focus attention on the various tax incentives available under the direct tax laws to motivate corporate involvement in promotion of family planning. These tax concessions if fully utilised, can go a long way in generating the much needed internal financial resources for family planning activities

Surtax

In addition to income tax, some companies are also liable to pay surtax under the Companies (Profits) Surtax Act, 1964. This charge is leviable on companies only. It covers all companies whether Indian or foreign. Surtax is charged broadly on the income computed for income tax purposes after making certain specified adjustments. The concessions available under the I.T. Act for promotion of family planning will automatically lighten the burden of surtax.

Expenditure on Family Planning amongst Company's own Employees

The importance of family planning received some recognition in the Incometax Legislation in 1965. The Finance (Nos. 2) Act, 1965 introduced a new clause (ix) in sub-section (1) of section 36. Under that section, some deductions which are admissible in computing taxable income under the head 'profits and gains of business and profession', are explicitly listed. Any bonafide expenditure by a company for promoting family planning amongst its employees is deductible under clause (ix) of sub-section (1) of section 36. This clause, as it stands at present is reproduced below for ready reference—

Concession under this clause is available only to a company. It is not available to any non-corporate taxpayer. Further, the expenditure permissible under clause (ix) is the one bonafide incurred for the purposes of promoting family planning amongst the company's own employees and not amongst the public at large. The deduction is restricted in its scope for the purposes of computing income from business or profession and is not admissible in computing the taxable income of the company from any other source.

Capital Expenditure

The first provision to clause (ix) enacts that where the expenditure incurred by a company for promoting family planning amongst its employees is of a capital nature, for example, expenditure on purchasing a mobile van or other capital equipment, or erection of a building for a family planning centre, it will be deductible over a period of five years beginning with the year in which such capital expenditure is incurred, in equal amounts.

Depreciation on Capital Expenditure

Section 35(2) provides that where deduction has been allowed in any previous year u|s 36(1)(ix), no depreciation shall be allowed under clauses (i) or (ii), (iii) and (iv) of sub-section (1) or sub-section 1 (a) of section 32 for the same previous year in respect of that asset. Section 35 (2) (v) read with secton 36 (1) (ix) says where the asset is used in the business after it ceases to be used for family planning work, depreciation shall be admissible under clauses (i), (ii) and (iii) of sub-section (1) of section 32.

There was some controversy in respect of claim for allowance of depreciation in respect of an asset representing expenditure of capital nature incurred for family planning work over and above the allowance of deductions in respect of such expenditure u|s 36 (1) (ix). If a capital expenditure of Rs. 2 lakhs has been incurred on family planning work, and subsequently that capital asset is brought into use for the purposes of business, the sum of Rs. 2 lakhs having been already deducted u|s 36(1)(ix), the assessee must be taken to have recouped the entire cost of the asset. The actual cost of the asset for the purpose of the allowance of depreciation in respect of that very asset in accordance with the Explanation to Section 43 (1) read with Section 32 and Rule 5 of the Income-Tax Rules, 1962 must be taken to be 'NIL' and no further depreciation is admissible. But a Special Bench of five members of the Income-tax Appellate Tribunal, Bombay in the case of ITO, Companies Circle VI (4) vs. Vickers Sperry of India by its order passed in October 1979 in ITA Nos. 2035 and 2036 (Bom) 1977-78 (Taxman, February 1980 p. 180) took a different view in respect or capital expenditure on scientific research. It held that the specific provisions in the I.T. Act would apply only if the asset is used for scientific research in the same year. There is no prohibition for claiming depreciation in respect of the same asset from the second year onwards. The bar for claiming depreciation applies only for the first year and not to subsequent years. The Tribunal's decision should apply with equal force to capital expenditure incurred for family planning work. However, the Tribunal's decision has been nullified by the Finance (No. 2) Act, 1980. It has amended Section 35 of the Income-tax Act. This clarificatory amendment is effective prospectively from 1-9-1980 and shall apply to the assessment year 1981-82 ownwards.

Surplus on Sale of Asset

The third proviso to section 36(1)(ix) also enacts that the provisions of section 41 (3) of the Income-tax Act shall be applicable to expenditure on family planning by a company to the same extent as they are applicable to expenditure on scientific research. In view of these provisions, if an asset representing expenditure of a capital nature for family planning work is sold without having been used for other purposes and the proceeds of the sale together with total amount of the deductions made u|s 36 (1) (ix) exceed the amount of the capital expenditure, the excess or the amount of the deductions so made, whichever is less, shall be chargeable to incometax as income of the business of the previous year in which the sale took place. The Explanation to section 41 (3) makes it clear that where the moneys payable in respect of any asset which is so sold, becomes due in a previous year in which the business is [illegible]longer inexistence, the provisions of this sub-se[illegible] would apply as if the business is in existence in that previous year. This Explanation is similar to Explanation 1 to section 41((2). The net effect of this provision is that the surplus to the extent of the deductions allowed u's 36 (1) (ix) shall be taxed as business profit. If the sale price exceeds the actual cost such excess shall be charged to tax as capital gains and not as profit u|s 41 (3) read with section 36 (1) (ix).

Amalgamation of Companies

The third proviso to section 36(1)(ix) also makes the provisions to sub-section 5 of section 35 applicable to expenditure in respect of family planning work by a company amongst its employees. Accordingly, where in a scheme of amalgamation, the amalgamation, the amalgamating company sells or otherwise transfers to the amalgamated company being an Indian company, any asset representing expenditure of a capital nature on family planning, the amalgamating company shall not be allowed the deduction on account of the balancing deficiency. The amalgamated company shall get the requisite benefit and the provisions of section 36 (1) (ix) will apply to the amalgamated company to the same extent as they would have applied to the amalgamating company if the latter had not so sold or otherwise transferred the asset.

Donations for family planning

A specific clause (vii) in sub-section (2) of section 80G which lay down that any sum paid by the assessee in the previous year as donation to the Government or any such local authority, institution or association as being approved in this behalf by the Central Government to be utilised for the purposes of promoting family planning, shall be allowed in full. This has been done with a view, to encouraging more liberal donations for the purpose of promoting family planning. It should be noted that where the percentage of deduction in respect of such donations has been raised from 50 to 100 of the qualifying amount, the qualifying amount itself will be subject to the existing overall ceiling limits specified in sub-section (4) of section 80G which provides that the qualifying amount of donation shall not exceed 10 per cent of the gross total income of the assessee, as reduced by any portion thereof on which income tax is not payable and by any amount in respect of which the assessee is entitled to a deduction under any other provisions of Chapter VIA of the Income-tax Act or Rs. 50,000 whichever is less.

There was some divergence of views amongst the High Courts in respect of deductibility under section 80G of a donation in kind such as donation of a machine or cloth or medicine. The Bombay High Court allowed it in the case of Associated Cement Companies, Ltd. (68 ITR 478). The Madras High Court expressed its agreement with the Bomby High Court. On the other hand, the Andhra Pradesh High Court held in Amonbolu Rajah's case (102 ITR, 403) that for qualifying for deduction u|s 80G, the donation must be given in cash and not in kind. As donations in kind were not intended to qualify for this concession, this controversy has now been set at rest by insertion of a new Explanation 5 of section 80G with effect from 1-4-1976 by the Finance Act, 1976. It is applicable for the assessment year 1976-77 and subsequent years. This Explanation 5 declares that no deduction shall be allowed u|s 80G, unless the donation is of a sum of money, that is, in cash. The monetary ceiling limit of 10 per cent and the inadmissibility of donations in kind should be carefully borne in mind by compay executives whenever a donation is made by a company.

Suggestions

In view of the very high priority necessary for the Family Planning Programme, a National Family Welfare Fund must be set up by the Central Government by creating a national trust. The trustees of this Fund must be drawn from distinguished citizens from various disciplines. This fund should start a massive educational and promotional programme for Family Planning. To provide an opportunity of active financial participation to all sections of the people, a donation made to this Fund by any taxpayer should be deducted in full. There should be no monetary ceiling on the same parity of reasoning as in the case of the National Children's Fund to which this benefit has been extended with effect from 1-4-1983 by the Finance Act, 1982.

Family planning work deserves the same importance as scientific research. The provisions of subsection (2A) of section 35 of the I.T. Act should also be made applicable to expenditure on family planning by all corporate tax payers. This subsection (2A) permits a weighted deduction of 133.3 per cent to an assessee who pays any sum to an approved scientific research association which has as its object the undertaking of scientific research or to a university or college or other institution for user for scientific research. A similar loaded deduction should be admissible on satisfaction of similar conditions in respect of payment for research to improve the efficacy of family planning devices or for evolving better and effective methods of family planning.

Under section 35 CC of the I.T. Act, companies are entitled, under certain conditions, to a deduction in computing their taxable profits. The expenditure incurred in the previous year on a programme of rural development is allowed to be deducted if the said programme is approved by a State level Committee consisting of the Commissioner of Income-tax and a senior office of the State Government nominated by it. Programmes approved under this section, amongst others include provision of primary health care, adult education and building of community welfare centres. A company can also take benefit of this concession. However, it should get its family planning programme approved in advance. Government should also make it explicitly known that the benefit of the deduction u/s 35 CC is also available on family planning work in rural areas. This is necessary as 80 per cent of India's population lives in villages. Unlike cities family planning aids and education are not readily available there. Voluntary effort by corporate sector in this field would be a welcome addition to the overall national effort embodied in Point No. 13 of the New 20-Point Programme. This point proposes to "promote family planning on a voluntary basis as a peoples movement". ☐

R.N. Jain : a self-made industrialist

SHRI R. N. JAIN, 46, had a brilliant academic career. He joined Jaipur Udyog Ltd. as an apprentice engineer. Later he was picked up by Modi Industries Ltd. Modinagar as mechanical engineer and sent abroad for training in connection with their welding electrodes manufacturing unit. A year of his sojourn through East Berlin, England, Swedan, France, West Germany and Switzerland etc. equipped him with latest technical know-how apart from widening his contacts. On return from his foreign training, he was appointed Chief Engineer and Factory Manager of Modi Arc Electrodes Company Modinagar. During his ten years stay at Modinagar, Shri Jain made improvements in the machines supplied by the foreign supplier as per Indian conditions and substituted the imported parts with indigenous ones. His efforts bore fruit and he was able to manufacture 1.5 mm and 2 mm electrodes on the imported plant. He left the Modis and started his own independent venture "Special Machines". With a paltry seed money of Rs. 20,000 provided by the Haryana Financial Corporation and a loan of Rs. 1 lakh, by the Bank of Baroda,, Shri Jain started building up himself and his unit from scratch in May 1974. Since then the unit has supplied plants practically to all corners of India and has saved foreign exchange worth crores of rupees. Messrs. Special Machines, Karnal are confident of manufacturing one complete plant within three months from the date of firm order. He has been receiving trade inquiries from Kuwait and other countries and hopes to fully explore export potential in the near future.

Shri Jains' firm has also trained technicians of the purchaser firms so that they could also save foreign exahange which the big and multi-national units have been draining in the form of royalty. Special Machines has so far supplied 18 plants including the two installed in the firm's own unit. The sales have recorded phenomenal rise during the last five years. So has the employment figures. Starting with 14 persons, the firm has now 207 persons on its roll. Shri Jain has expanded his business by taking his younger brother as Partner of another sister concern "Industrial Products", which manufactures welding electrodes. The working capital and term loans of the firm exceed Rs. 60 lakhs. This is not the end. He has set up a Research & Development Cell in his unit, which is managed by high qualified foreign [illegible]ned and experienced technicians.

Shri Jain was awarded "Udyog Patra" by the acting President of India Shri B. D. Jatti on 25th February 1977, for his contribution to the economic development of the country by the Institute of Trade and Industrial Development New Delhi ☐

Sanitation pays

For centuries, the poorest class in India had the job of removing buckets of night soil from private houses, with all the stigma attached to such work. Inspired by Gandhi's philosophy, a public-spirited group in Patna, India, has put an end to this degrading work and improved the environment, both aesthetically and hygienically, at virtually no cost to the community. The experiment showed that toilets pay for themselves.

JITENDRA TULI

GANDHI MAIDAN IN PATNA is one of the city's biggest parks. It is a landmark, and the venue for all important public meetings and rallies. Early in the morning, one can see hundreds of people taking a brisk walk; in the evenings it seems to be taken over by children who play the games children usually play

Till a few years ago, however, all this was not possible. The maidan, as an elderly Patna resident put it, "was strictly off limits, and one avoided going anywhere near it. As for the smell, well, you certainly did not have to ask for directions. Your nose would lead you to it". The park was being used as one vast, open-air public convenience.

As Mr. Bindeshwar Pathak, Chairman of the Sulabh Shauchalaya Sansthan (now known as Sulabh International) explains, "it was certainly a very real nuisance and a shame too. The only solution seemed to be to provide the people with an alternative". And that is exactly what his organization, a voluntary agency involved in providing appropriate sanitation services, set about to do.

It was clear from the beginning that the facilities available in Patna were woefully inadequate to meet the demand. Apart from the city's own population, Patna has a sizeable "floating" population. There are also a large number of rickshow pullers (over 50,000), many of whom do not have a permanent place to stay.

This pattern is similar to that in many other cities where an estimated one-third of all urban households have no latrine; another third have to put up with bucket service latrines; the remaining third are served by: shared flush latrines, 21 per cent; individual flush latrines, 7.2 per cent and septic tank latrines for 5.2 per cent.

In effect, according to modest estimates, 7 million urban households in India have bucket latrines which should be replaced with water-seal latrines. There are another 7 million households without latrines that need to be provided with the new, water-seal, latrines.

In the eight years since the first pair of "Sulabh Shauchalayas" (which means "easy-to-use convenience") were installed off Gandhi Maidan, there are now over 70,000 in Bihar State, with nearly 10,000 in Patna city alone. Today, over 50,000 persons daily use the cubicles set up in the 40 centres which are run and managed by Sulabh International.

Everyone pays

At one such centre, the busiest in Patna, over 3000 people use the services daily. There were office-goers and rickshaw pullers, tailors and shop-keepers and casual visitors. What each of them appreciated was the ease and speed with which everything was done. "Even during rush hour, from 5 a.m. to 7 a.m. when there is a queue of 5 to 10 persons outside each cubicle, there is no pushing or shouting. All you do is pay 10 paise (one US cent), get a pinch of soap powder, collect your container with water and find an empty cubicle". The cubicles are cleaned by a band of paid workers who take great pride in keeping everything neat and tidy. As Mr. Pathak explained, although nobody is asked to pay, "nobody refuses". He explained, however, that women and children could use the facility free. Also, those who are unable to pay are not charged.

Most of the centres run by Sulabh International in Patna have an area kept aside for bathing. "We do not have cubicles yet, but hope that this will be possible later", says Mr. Pathak.

At one of the bigger centres, a highly successful experiment has been conducted in using human waste to produce bio-gas. Enough of it is produced to light not only the lamps at night, but also to use for cooking purposes. There are plans to install more bio-gas plants at other centres and to provide gas to the neighbouring households. "The potential is immense," says a confident Mr. Pathak.

The agency has also launched a scheme to train people to make and install "sulabh shauchalayas". It actively helps householders with the necessary formalities of getting loans from the local authority to convert bucket private into water-seal latrines and then goes ahead and installs them. Sulabh International gives a guarantee of two years and looks after the maintenance, where needed.

Mr. Pathak says that his main purpose in taking on this work was to see Mahatma Gandhi's dream of putting an end to the degrading system of scavenging come true. "I must say that though the mental inspiration came from him, it was a WHO publication that really set me off." And then he pulls out a much-used copy of "Excreta Disposal for Rural Areas and Small Communities", by E. G. Wagner and J. N. Lanoix (WHO Monograph Series 39, 1958).

(Continued on next page)

Population growth and role of women

M. Amara Jyothi

IN THE WORDS of Dr. S. Chandrasekhar, the famous demographer of India, "The population problem is the most fundamental of all human problems. It affects every aspect of man's social, individual, national. It affects the health and happiness of individual families, it affects the prosperity and social progress of nations and it affects the peace of the whole and the populations problem may also lead to war".

Family Planning Association, was formed thirty years ago but inspite of its efforts, it has not yet achieved its goal because it could not reduce the fertility rates of those groups of people for whom the programme is really intended. This means, though the population explosion is of mammoth dimension, it is felt and realised only among intellectuals and few educated, who comprise the small part of population.

Thus the need of the hour, is to tackle the 'population problem' from all the angles. One of them is knowing and changing the attitudes of women, who constitute the large portion of the population and who have been neglected for a very long time. The attitude of women have great influence on population control.

This aspect incidentally, happens to be the subject of my dissertation, wherein it was attempted to find out the attitudes of women regarding small family norm, and also various factors influencing their attitudes. Both educated and uneducated belonging to all three major religions of India are included in the sample.

The analysis of the data indicates that irrespective of their religions, almost all the uneducated women have got negative attitudes towards small family norm. Some women even refused to think about it. In some cases, even though the men were willing to get operated, their wives refused it. In some other cases, they felt that they have to obey the wishes of husband and relatives.

While among educated women all of them have got positive attitudes, but the degree varies depending upon of the religion. Hindu women are more positive than Muslims and Christians. The reason for this lesser positive attitudes of women belonging to Christianity and Islam is the feeling that as they belong to minority community; their security in society increases in proportion to the rise in their numbers.

The side reason for preferring a large family among uneducated women, is their feeling that a large family is more prosperous and provides them security in their old age.

Thus the need of the hour is to create an awarness among them about the various benefits of the small family and how in turn it affects the development and prosperity of a country and quality of life. They should also be made conscious of population growth and situation in India and the need of controlling population.

The other way is to provide security to couples through a national social security scheme to support them in their old age or on loss of an earning member. This scheme will relieve most of the weaker sections, of the feeling, that they don't have any sort of security in hard times.

I feel that the study of attitudes of women and their influence is the grave necessity, because for a developing country, the contribution of women is as indispensable as that of man. Every women is expected to play her role inside and outside the home. □

Paper presented at the Seminar on 'Population Problems and Family Welfare' organised under the joint auspices of Prakasan Institute of Development Studies, Yojana(Telugu) and State Family Welfare Bureau, Andhra Pradesh on October, 9, 1982 at Hyderabad.

(Continued from page 17)

"I was most impressed by this simple approach to a complex problem, and even though I am not an engineer or scientist, I believed in the concept." At the first available opportunity, he tried to put what he had read into practice. "And I'm glad to say that in this case the theory proved practical."

It is not only in Patna that this is being tried out. Already, similar centres have been established in the States of Andhra Pradesh, Karnataka, Madhya Pradesh, Orissa, Tripura, Uttar Pradesh and West Bengal. There are plans now to open up "Sulabh Shauchalayas" in Jammu and Kashmir and Rajasthan.

As Mr. Pathak points out, the Sulabh Shauchalaya movement has proved more than one thing. "We all know that with the people's participation, you can achieve anything. We are fortunate that we have been able to show in practical terms that there is an alternative to scavenging. People need not make a public nuisance of themselves if they are provided with a convenience, which is clean, for which they will be willing to pay a nominal charge. We have also shown that if the municipal or State authorities can provide public conveniences, the community can effectively and efficiently maintain and run them. In fact, we have generated employment for at least 300 people in Patna city alone, not to mention the soap manufacturers and others engaged in making and maintaining the 'sulabh schauchalayas'.".

As one can see clearly from the experiment in Patna, sanitation certainly means cleanliness, and it pays too. □

(WHO)

Cropping pattern in India

Very little change has taken place in the cropping pattern in the country. Food crops dominate in the cropping pattern in most of the developing countries. In order to change the cropping pattern, measures like appropriate incentives, provision of a favourable optimum use of land, diversifying the cropping pattern and mixed farming should be given due attention.

P. S. MUNDINMANI

CROPPING PATTERN MEANS the proportion of area under different crops, the rotation of crop and area under double cropping in the state or in the country. P. V. Johan states that "the term cropping pattern indicates the product mix or the crop mix that the cultivator gets from his land". The analysis of this is necessary for an identification of the major crops that are grown in the district or in the region by its farmers or cultivators. Further any change in the cropping pattern may reflect the influence of demand arising from an increase, in general, in the level of income and also because of the development of agro-industries. With rising incomes, the demand for important non-food crops would increase at a relatively faster rate and similarly among food crops there would be a continuous shift in consumption of food grains in favour of superior cereals. Thus farmers generally produce two types of crops, viz., (a) food crops and (b) commercial crops or non-food crops. The study of these two would reveal the stages of agricultural development and the nature of the economy. It is observed that, the larger the area under commercial crops, greater will be the development, indicating the large scale mechanization in the agriculture sector. Further it also reveals the nature of the soil i.e. fertility of the land and agrarian structure of the particular region or state.

In most of the underdeveloped countries, farmers normally produce more food crops and generally the area under food crops is more as compared to the area under commercial crops. Various efforts have been made in these countries for changing the cropping pattern i.e., to bring more area under superior food crops and commercial crops but these efforts have negative effect on the economy. For instance, Indian Government has taken various measures for raising the agricultural output and changing the cropping pattern but as a result only limited change has taken place in the cropping pattern.

Main Reasons

The main reasons for unchanging cropping pattern in the country are social factors, such as density of population, customs, traditions, attitude towards material things, Physical factors like soil, climate, rainfall, economic factors such as prices of inputs and outputs, farm size, tenure, insurance against risk, etc. These factors have an important bearing on the types of crop grown and the area devoted to different crops. In the recent days, the validity of this statement is not found correct. A close study of recent cropping pattern in states or districts reveals that some changes are taking place in the cropping pattern. Take for example Punjab, where farmers have considerably changed their cropping pattern and shifted towadrs superior and commercial crops. The shifts in cropping pattern by the Punjabi farmers are mainly based on economic gains. However taking the country as a whole very little change has taken place in the cropping pattern. From the discussion, it is clear that food crops dominate in the cropping pattern in most of the underdeveloped countries. Important features of such cropping paterns are viz., (a) predominance of small and subsistance farm, (b) growth of limited varieties of crops, (c) lower level of income to farm families and (d) area under different crops remains the same. It is obvious that in order to change the cropping pattern, the following measures should be given due attention viz., (a) appropriate incentives, (b) providing a favourable milieu, (c) optimum use of land by providing irrigation facilities to farmers or irrigated farming, (d) diversifying the cropping pattern, and (e) encouragement of mixed farming.

(A) *Optimum use of land by providing irrigation facilities to farmers or irrigated farming*

Water is indispensable to agricultural production. The main physical requisite for the development of agriculture is water which must be timely available and adequate. Irrigation makes possible the growth of more than one crop where one is grown and one or more when none is possible. This additional land use aspect of irrigation results in larger production. Double and multiple cropping is of great significance where land is scarce and therefore not much can be expected in the direction of extensive cultivation. Thus it is an established fact that, income of the farm families generally increase along with increase in the irrigation facilities. Y. K. Murthy has rightly pointed out: "irrigation is the basic factor to improve the income of the cultivators by helping them to alter their cropping pattern."

(B) *Providing a favourable milieu*

Irrigation alone can't increase agricultural output and bring about the desired shifts in the cropping pattern. There is a need for deliberate measures in this field on behalf of government. This action is most urgent and important particularly, in the under developed countries where, market is not fully developed and where farmers response is poor due to traditional-outlook and naturally, not linked with market. In such a situation various efforts need to be made, viz., service facilities, provision of inputs, demonstration of the profitability of different crops, ensuring guaranteed incomes from these crops and other infrastructure facilities. All these measures are sure to create an environment where the farmers will be encouraged to think of the crop pattern that gives them the maximum benefit. But all said and done, the effectiveness of the measure lies in the execution and implementation the policy so as to reach the benefits to the farmers

(C) *Appropriate incentives*

Under-developed countries are basically charactenised and dominated by small farms and small individual farmers. They not only require infrastructure facilities like irrigation, storage, marketing, finance, information etc., but also require some incentives such as reasonable prices, crop insurance, subsidies for inputs and lower taxes. Among these incentives, higher prices for the outputs and lower prices for the inputs play vital role in changing the cropping pattern, particularly in the initial years. Because in most of the under-developed countries, while prices of farm inputs have considerably increased on the other hand farm families are not getting remunerative prices for their products. This trend may adversely affect not only on the present cropping pattern but also the farm families in near future, may shift back to traditional cropping pattern where risk element is very negligiable. Above all, failure in such cropping pattern, won't affect severally on the farm families. In such a situation, the best remedy for changing the cropping pattern is higher prices for agricultural goods and lower prices for the inputs. Coming to the tax as an incentive, in the beginning years of the change in the cropping pattern, some tax incentives should be given, which induces change in the cropping pattern. But once change takes place in the cropping pattern tax as an incentive should be withdrawn and progressive income tax should be introduced to avoid under taxation of agricultural sector. In such cases, if government gives further tax incentives, it leads to reduction in the revenue to the government, which is vital for economic development. E. T. Mathew calculates the burden of individual taxes imposed on agriculture and concludes: "Indian Agriculture is under-taxed in an absolute sense, in relative sense and in the context of the need for additional resources for economic development."

(D) *Diversifying the cropping pattern*

Diversifying the cropping pattern is another remedy, which fetches higher yields and income to the farm families. Diversifying the cropping pattern particularly, in favour of superior food crops and commercial crops, certainly improves the conditions of the cultivators. But for small farmers, who produce food crops for home consumption it may lead to adverse effect on their economy. For them, the alternative suggestion is, balanced cropping pattern, i.e., to grow both food crops and commercial crops. This can be achieved only by increasing in the irrigation facilities. Such type of cropping pattern will have many beneficial effects on the economy. Firstly, it will ensure stability in the total output with some crops always compensating for the failure of other crops. Secondly, the shift to high valued crops will obviously add to the total value of output. This will imply a more efficient utilization of land. Thirdly, larger variety will enable the country to go in for crops with large foreign demand. Given a comparative advantage in such crops, the country's capability of earning foreign exchange, as also of providing a stable basis to foreign trade will considerably improve. And lastly, the farmers with a reasonably sized land, or a cooperative with land of very small farmers pooled in, will gain from the stable or higher incomes.

Another suggestion particularly to small farmers for changing their cropping pattern is, to produce only commercial crops which automatically increases income and purchasing base of the small farmers. But this type of strategy may adversly affect on total food production and will have unwelcome impact on the price line. This problem can be solved either by importing food from other countries or by increase the food production from big and medium farmers. For developing countries like ours second alternative suggestion is more appropriate and can help to produce more food grains by bringing more and more area under food crops of the big and medium farmers.

(E) *Mixed Farming*

Mixed farming is another alternative suggestion to improve the farmers financial position. It includes occupations like sericulture, poultry, dairy farming etc., along with the farm activities. For starting of these activities, government intervention and assistance is quite necessary. Assistance should be both in cash and kind. For example, for starting of dairy farming, many small farmers have space problem, for them government should sanction not only finance but also land, building materials, fodder, dairy animals etc. □

Dairy scheme in Surat

A dairy scheme has been implemented by the Bank of India in Surat district. Under the scheme each beneficiary was eligible for a loan ranging from Rs. 4,500 *to* 5,000 *for the purchase of milch buffaloes. Among the beneficiary families* 46 *were living below the line of poverty. After the implementation of scheme* 19 *families out of* 46 *were able to cross the poverty line, the scheme also supplied* 2300 *litres of milk per day and it created* 120 *mandays of employment in each beneficiary household.*

DAIRY schemes have been accorded a high priority in our rural development programmes aimed at augmenting the income of the weaker sections in the country, particularly in the rural areas.

One of the dairy schemes for the benefit of the low income groups including agricultural labourers, small and marginal farmers has been implemented by the Bank of India in Surat district where the tribals account for a sizeable proportion of the district population. Under the scheme each beneficiery was eligible for a loan ranging from Rs. 4500 to Rs. 5000 for the purchase of two milch buffaloes. The scheme has been implemented with the cooperation of Small Farmers' Development Agency (SFDA) in the district which provided subsidy not exceeding Rs. 2500 per beneficiary.

The scheme envisaged financing the target groups for purchase of 600 milch animals involving a total outlay of Rs. 15 lakhs phased over three years commencing July 1978. It had altogether financed Rs 12.18 lakhs to 396 borrowers for purchase of 586 buffaloes under the scheme.

The bank entered into a tripartite agreement with the borrowers and the milk societies insisting the borrowers to give in writing that they would sell the milk through the society and authorise it to deduct certain proportion of income accrued from sale of milk towards the repayment of bank loans.

Agricultural Refinance and Development Corporation (ARDC) agreed to refinance the scheme. It had sanctioned refinance on the basis of unit cost of Rs. 2200 per buffalo. ARDC desired that the bank should undertake an evolution study of the scheme. The bank did the same by organising a field survey covering a representative sample of 67 beneficiaries from 8 villages in the project area. The required data were obtained from the sample beneficiaries by personal interviews through a questionaire specially drawn up for the purpose.

Major Findings

The sample of 67 beneficiaries comprised 12 landless labourers, 17 marginal farmers, 22 small farmers and 16 medium farmers. As many as 51 out of 67 sample beneficiaries were tribals, 5 belonged to the scheduled castes and the remaining to other communities. Income earned by the beneficiary households from diverse occupations excluding dairy activity averaged Rs. 5,831 in 1980-81.

Although a borrower under the scheme was eligible for loan for purchase of two buffaloes, in reality not all beneficiaries had availed of full loan. However, 10 beneficiaries had reported having lost one of the two buffaloes due to death. In other words, 30 beneficiaries had only one buffalo each at the time of interview.

The reasons for non-availing of the bank loan for the second buffalo by some sample beneficiaries were acute shortage of green fodder and inability to maintain the second buffalo in view of the poor economic means. Five beneficiaries wanted to avail of the bank loan for the second buffalo but only after repaying the loan for the first buffalo. In the remaining cases, the bank refused to disburse the loans as they were irregular in repaying the loan instalments. Thus, as many as 20 out of 67 sample beneficiaries did not avail bank loans for the second animal and 17 out of 20 such beneficiaries belonged to the weaker sections of the society comprising landless labourers, marginal and small farmers.

Left to themselves regarding the purchase of buffaloes without proper and timely guidance, some beneficiaries who had no past experience in dairy activity purchased buffaloes which did not fully meet the norms specified by ARDC. The study revealed high rate of mortality among calves of buffaloes in the project area. This was borne out by the fact that of the 172 calves born, 82 died before they attained the age of 2 years. Considering the need for augmenting the stock of improved breeds of buffaloes, such a high mortality rate among buffaloes in the project area is a matter of concern.

The average lactation period of the buffaloes purchased by the beneficiaries was about 8 months compared to 10 months anticipated in the scheme. The milk yield realised by the beneficiaries during one lactation period averaged 1012 litres against 1800 litres envisaged in the scheme. Likewise, the dairy milk yield realised by the beneficiaries averaged 4 litres against 6 litres assumed in the scheme.

The gross income earned by the beneficiaries from dairy activity including value of milk retained for domestic consumption and dung averaged Rs. 2901 per lactation period. The milk price realised by them varied from Rs. 2.10 to Rs. 3 per litre and averaged Rs. 2.67 per litre. The average cost of feeding and maintenance of a buffalo including labour charge and insurance was estimated to be Rs. 1722 per lactation cycle, comprising lactation and dry period. The net income earned by the beneficiaries from one buffalo has been estimated first without including the cost of family labour and then by taking into account the imputed cost of family labour. Thus, two estimates of net income from dairy have been computed. The net income excluding the cost of family labour was estimated to be Rs. 1089 annually. After taking into account the imputed cost of family labour, the net income earned by the beneficiaries from one buffalo was estimated to be Rs. 694 or Rs. 642 per annum.

Financial Gains

For beneficiaries with two buffaloes the annual income from dairy excluding the cost of family labour and including the cost of family labour worked out to about Rs. 2200 and Rs. 1300 respectively. Against this, the borrower has to set aside a sum of Rs. 2.000 per annum towards repayment of bank loan amounting to Rs. 4500. After taking into account the repayment of bank loan, surplus income left with the beneficiaries was negligible, till the loan was paid fully.

After the payment of loan with the additional income earned from dairy business, many beneficiaries tried to improve their standard of living, though in a modest way.

An effort was made in the study to assess the extent to which the scheme had helped the beneficiaries to cross the poverty line. The study revealed that as many as 46 beneficiary households were living below the poverty line in the pre-borrowing period with the additional income earned from the dairy scheme (excluding the imputed cost of family labour), 19 beneficiary households could cross the poverty line—of these, 4 had availed of bank loan for one buffalo each and the remaining for purchase of two animals each. What is disquieting to note is that 27 sample families continued to live below the poverty line even after borrowing from the bank.

Milk Supply & Employment

The impact of the scheme on the project areas has been assessed in terms of the following two parameters, namely, (i) quantity of milk produced and (ii) employment created. Net addition to milk supply from the scheme amounted to about 2300 litres per day. One member in each household mostly women was engaged for about 4 hours per day during lactation period and between 2 and 3 hours during dry period in looking after the milch buffaloes. Thus the scheme had annually created 120 man-days of employment in each beneficiary household.

Financial viability of the scheme has been assessed from the survey data. The result of the exercise at 11 per cent rate of interest showed that without the imputed cost of family labour the scheme was viable as IRR was estimated to be 25 per cent. However, with the inclusion of the imputed cost of family labour, the present worth of the cost of producing milk turned out to be higher than the present worth of the value of milk and dung suggesting that the scheme was not viable at 11 per cent rate of interest. In other words, if we allow for the cost of family labour, investment in dairy is not an attractive economic proposition.

Rate of recovery of loans under the scheme was satisfactory, thanks to the tripartite agreement.

Recommendations

It is suggested that the milk society should arrange purchase of milch buffaloes by involving the beneficiary members and a veterinary doctor whose guidance and advice should be sought not after purchasing buffaloes as is the existing practice but before purchasing them. If such a safeguard is provided, the borrowers will buy only those animals which ensure remunerative return.

Many beneficiaries had complained that the maximum loan amount of Rs. 2500 sanctioned by the bank for purchase of a buffalo was inadequate. The loan amount be suitably raised to enable the prospective beneficiaries to buy buffaloes of specified breed, age and lactation stage in future.

While so much emphasis is being placed on promoting dairy schemes, very little has been done to strengthen and improve the extension services. The beneficiaries, most of whom were tribals and without past experience in dairy activity, needed guidance in feeding and rearing of milch animals. Organisation of periodical cattle camps to educate the beneficiaries in dairy business through demonstration may go a long way in improving the benefit of dairy schemes.

To improve the veterinary services, it may be desirable to raise the present number of livestock inspectors from 5-6 per taluka to at least 10 per taluka Improvement in veterinary services is justified in the context of steady increase in the population of milch animals following implementation of dairy schemes in the project area.

There has been a significant increase in dairy activity in the project area but the veterinary facilities have not increased correspondingly. Consequently, the existing facilities have proved inadequate. It is, therefore, suggested that the annual budgetary allocation for medicines in veterinary hospitals and in Veterinary First Aid Centre be suitably raised.

Many beneficiaries were not aware of the importance of cattle insurance. They were unaware that claims had to be submitted to the insurance company within 24 hours after the death of milch buffaloes along with the supporting evidence. The milk societies should be jointly held responsible for reporting the death of buffaloes to the bank on time.

In order to ensure some improvement in the levels of consumption of the beneficiary households right from the inception of the scheme, they should be allowed to use a part of the net income earned from dairy activity for family consumption. The repay-

(Contd. on Page 23)

Yellow card—a helping hand

BHUPINDER SINGH

THE 25-year old Pawan Kumar Nirash is no longer 'nirash' (disappointed). Thanks to the yellow card issued by the Punjab Government.

Only a year back this unemployed youth of the Bhargo Camp Colony in Jalandhar was unable to feed his four member family.

Four years back Pawan Kumar married a girl against the wishes of his parents, and was turned out of the house. He borrowed Rs. 30 from a friend and started making mini cricket bats for children. Within two years or so, he became father of two. Now it was really difficult to feed the family.

Then he came to know about the yellow cards and the Punjab Scheduled Castes Land and Development Finance Corporation. Its local branch advanced him an interest free loan of Rs. 3600. And that proved a turning point in his life.

Pawan Kumar spent half of the amount of loan on purchase of wood and the remaining half on paints and other material required for the manufacture of cricket bats and hockey sticks. With this investment he was not only able to increase his turn out but also substantially improve the quality of his products which became more readily acceptable in the local market. Not finding sufficient space for his flourishing business in the one-room rented house he shifted his "workshop" to its roof right under the open sky.

The young man now feels rehabilitated economically and socially.

"It is all due to the yellow card which I received from the Punjab Government early this year. The card enabled me not only to find my feet economically but also regain my social recognition. With my income rising every month, my credibility in he market has also improved considerably. Besides, my parents and other relations are no longer opposed to my marriage. All this created a cogenial atmosphere in my family. What else do I want?"

Having undergone a sterilisation operation, Pawan Kumar is free from any worry of further addition to the family. He is already planning to construct his own house with the help of another loan from the State Government.

Pawan Kumar Nirash is not the only head of a poor family who appreciates and introduction of yellow cards by the State Government. According to a survey over 8.23 lakh families having an annual income of Rs. 3,600 or less were identified and given yellow cards. The yellow card holders are entitled to adequate supply of subsidised essential commodities, fertilizers, seeds and health care coverage, besides, interest free loans.

(Contd. from page 22)

ment period should be extended to 4 years, thus the borrowers will find some surplus income after repaying the bank instalment from the beginning of the scheme.

An analysis of average cost of producing milk and net return from a litre of milk revealed that the cost of feeding and maintenance of a buffalo accounted for nearly two-thirds of the average value of milk per litre. If family labour is taken into account, net return from sale of milk was barely 18 per cent. Since, the scope to reduce the cost of feeding is limited, the mother dairy should examine the feasibility of revising the milk prices in order to provide reasonable incentive to those engaged in dairy activity.

Finally, the participating branches have not strictly observed the norms stipulated by ARDC in implementing the scheme. As revealed by the study, pre-sanctioning inspection was weak and post-sanctioning inspection irregular. In order to enforce effective supervision over the end-use of credit, the branches should undertake regular post-sanctioning inspections without fail.

Lessons for Future

It is suggested that while implementing similar schemes in future, the bank may take cognizance of the following lessons drawn from the study :—

(i) It is necessary to ensure that the prospective borrowers, particularly those with no experience in dairy business are given adequate guidance in the selection and purchase of specified milch buffaloes.

(ii) The bank may avoid granting loans for purchase of milch buffaloes which do not conform to the norms stipulated under a dairy scheme.

(iii) It may be advisable to insist on the milk producer's societies wherever they have a role to play in implementing dairy schemes to arrange for periodic medical check up of milch buffaloes on behalf of their members in order to ensure better upkeep of buffaloes and avoid prolonged dry period. □

Hydram: Irrigation without power

Milap Chand Dandia

THE RAJASTHAN EXPERIMENT of lifting water and carrying it to the fields on higher altitudes may prove a boon to the farmers. The system known as 'Hydram' needs no electric or diesel power and can work round the clock with no operational cost.

Hydram is motorless pump that uses the force of flowing water to continuously pump water and can provide thousands of litres of water without using electricity, gasolin or any other external power source. One Hydram can pump enough water to irrigate 8 to 10 hectares land under Rajasthan conditions depending upon the available fall and the delivery head.

The ram action of the hypraulic pump i.e. Hydram is fairly simple. Water flows down the drive pipe to the ram developing speed and power due to its weight and velocity. It flows through the outside value until it reaches a certain velocity causing the value to close suddenly. The closing puts a sudden stop to the flow of water resulting in "Water Hammer". This is an instantaneous pressure of great thrust which forces water into the air dome. When the pressure in the air dome equalizes and over comes the driving force behind it, a rebound or backing up of water takes place. This operation is repeated about 20 to 30 times per minute building up pressure in the ai dome which in turn forces water up through the delivery pipe to the desired head. The efficiency of the ram pump is between 50 to 75 per cent depending upon the vertical fall and the heighest point where the water is ultimately required to be delivered.

WHILE PLANNING A HYDRAM at a particular point water should be measured during the driest part of the year. If the supply is small, water should be run into a bucket of know capacity say a 200 litres capacity drum by correspondent, The Economic Times, Jaipur constructing a small weir or earthen dame accross the stream and allowing the over-flow to run by pipe or flume into it. Flow of water per minute or per second determines the largest size ram that can be used. Normally 3 to 4 cusec discharge is sufficient for operating a 8″ × 4″ Hydram.

A discharge of 10 litres per second is enough to irrigate about 10 to 15 hectares land when the hydraulic ram is working for 15 to 20 hours per day.

Hydrams are proposed to be installed mainly for the benefit by small and marginal farmers specially belonging to scheduled caste and scheduled tribes category having small land holdings under un-irrigated condition lying along side of the river and streams. Thus hydram water supply system will be a boon for these beneficiaries as each hydram is expected to cover about 20 to 25 beneficiaries and the recurring expenses to be born by them are negligible.

SINCE THE HYDRAM SYSTEM of irrigation does not require any conventional source of energy viz electricity or diesel, it would result in the saving of electricity|diesel indirectly. If the same amount of water is pumped from a well for irrigating 10 hectares of land, it would require installation of 10 HP electric motor pumpset or 12 to 15 HP diesel pumpset. Annual electrical energy saving per hydram is about 15000 KWH or 5500 litres diesel oil.

The investment cost is also not much. A Hydram may cost between Rs. 15,000 to 20,000 at site and the cost of construction of supply channel, intake chamber, intake pipe line and the delivery system may cost between Rs. 40,000 to Rs. 80,000 depending upon the length and the size of the intake and delivery system. In any case investment cost for the installation of one Hydram of size 8″ × 4″ is not likely to be more than Rs. 1 lakh (Table—I).

Ten Hydrams are proposed to be installed in seven districts of the State (Table—II). All the seven districts have adequate water potential. At three places Udaipur, Dungarpur and Ajmer the work has already been completed and there Hydrams have started functioning. Installation of 10 hydrams is expected to cost Rs. 10,00,000 and will benefit about 225 farmers and will bring about 100 hectares, of additional land under irrigation through the use of renewable source of energy and will save about 1,50,000 units of energy annually. In term of diesel it will save about 54,500 litres of oil.

The project implementing agency of the hydrams at the State level is the Special Schemes Organisation. At district level, the scheme is being implemented by the respective District Rural Development Agency who already have requisite technical staff.

Unit Cost Estimate (For One Hydram)

TABLE-I

Unit cost estimate (for one hydram)

S.No.	Item	Amount
	Machinery	51,980.00
	Hydram Foundation Block	2,150.00
	Check dam/anicut	37,640.00
	Delivery tank L. S.	3,000.00
	Distribution Water Tank 10000 Lite capacity @ 40 paise per litre	4,000.00
	Intake pipe supporting structures	1,200.00
	Total	99,970.00

Increased production at factories and farms

S. A. M. Jafri

HERE IS A TALE of a backward district where people from factory and farms have jointly proved that changed agriculture will cartainly help people to prosper. Raebareli district of U.P. is one of the backwards districts of the State. More than 80% of its population lives on agriculture earnings. The cultivated area of the district is 2,85,073 hectares, out of this 1,44,923 hectares are irrigated. The area under cane cultivation used to be 1200 hectare and has been expanded to 2400 hectare during the recent years. This is the result of integrated efforts of extention services.

The district has tremendous potential for sugar cane production. However, the total acreage under sugar cane cultivation remained stagnant till early 1980. The major break through was achieved by giving loan to the cane growers to the extent of Rs. 25 lakh approximately in the year 1980. The loan was mostly given in the form of inputs required for growing cane. The history of the previous years was analysed and it was noticed that out of the total acreage of 8000 acres, 50% i.e. 4000 acres was confined to a particular pocket of the district, where sugar cane was being used for producing Gur even prior to the commissioning of the sugar factory. Out of the remaining 90% of the acreage was covered by small and marginal farmers.

IT WAS DECIDED THAT for 1 acre sowing, inputs worth Rs. 1000 be given as loan through the Cane Cooperative Society, newly established at Raebareli, though there were restrictions from financial institutions and others. The response was positive.

Acreage under sugar cane increased. Thus, with increase in acreage, the increased productivity was also ensured by regular doses of fertilizers, top dressing, irrigation, etc. Out of the total acreage of 11800 acres (Plant 8280+3560 Ratoon) available for the season 1981-82, the average production of sugar cane was 125 qtls. per acre. Thus out of the total production of nearly 16 lakh qtls. cane, 11 lakh qtls was made available to the local sugar factory and 2.5 lakh qtls. was converted into seed. Thus 70% of the total production of cane was made available to the mill.

The local factory has a capacity of 1250 ton crushing days (TCD) and in a normal season of 150 day, it can crush 18 lakh qtls. cane in a season. In the next season, with the present acreage of 10.711 plant and 9362 ratoon, the factory should get 18 lakh qtls. from Raebareli district alone. In the next two years or so, the plant could aspire for expansion as well.

VARIOUS DEVELOPMENT SCHEMES VIZ., construction of link road, tube wells, ADV Dunlop sets, distribution of free Press-Mud, etc., have also been introduced.

So far 100 per cent cane price payment has been ensured to the farmers. Financial viability of the cane crushing unit has been adversely effected due to crushing in the months of May and June as per existing policy of the Government. They had to crush almost 3.00 lakh qtls. sugar cane in the hot months, at high cost of transportion and low recovery. This is the only sugar Factory in India to operate 53 cane purchasing centres in a radius of 150 kms. covering seven districts. The districtwise distribution of centres is thus : Raebareli 27, Lucknow 3, Sitapur 5, Barabanki 12, Sultanpur 2, Kanpur 3 and Fatehpur 1

The district as a whole is getting used to the principles of cane marketing. With cash payment of cane price of over rupees 2 crore, the means of transportation need to be increased. Needless to say emphasis is on small and marginal farmers to improve their lot. Most encouraging thing is this that the loan realisation has also exceeded 95%.

These efforts need to be sustained in the years to come. While concluding it would not be proper to put fullstop without paying tribute to the unique spirit of the employees of the organisation, who overcome enormerous problems and difficulties in achieving the goal set for production year 1982. Every members of the factory viz. Gram Sewak to the top executives deserve commendation. All of them followed Prime Minister's call of the "PRODUCTION YEAR 1982" in its letter and spirit by crushing and producing almost 600% more than the previous years.

Social Security for unorganised labour

DHARMA VIR

WE HAVE MADE good progress in providing social security in the organised sector in this country but at the same time a vast majority of the work-force which substantially contributes to the economy of the country has remained out of the net work of these benefits due to a variety of reasons. At the same time in the profile of the unorganised labour, we find a variety of social evils. We also know that the unorganised workers suffer from lack of literacy, lack of employment and income, and poor living and working conditions. Various studies have thrown light on the socio-economic background of workers employed in construction, garment, brick kiln and security benefits to them is obvious. The Government has been earnestly trying to bring this segment of the Society within parametres of various social security benefits yet due to a number of problems, these could not percolate down to the level of the beneficiaries to the desired extent.

When we contrast the pictures of social security benefits available to the organised versus unorganised sector, we get a grim picture. However, we have to find some way out and something can certainly be done to ameliorate the lot of unorganised labour. We have to explore possibilities of extending various statutory social security schemes to the unorganised sector. In view of the difficult conditions innovative thinking and efforts are much required. Although it is difficult yet, it is hoped that something meaningful could be done for them. The responsibility for providing social security can not be let alone on the Government. Voluntary efforts are also required. We must make efforts for involving people in the process of carrying social security to them.

The Kerala experiment namely Dinesh Beedi Workers' Central Cooperative Society success in improving the quality of work life of the workers and extending them social security benefits deserves attention. It gives us an idea to revitalize co-operative movement in the country to improve quality of life for unorganised labour. This was an innovative approach and again brings into focus the need for designing innovative organisations to achieve our objectives of transferring benefits to the unorganised labour. Any innovations to this effect shall receive support and attention at our end.

The Gvernment is very keen on implementing several programmes under the 20-point programme of our Prime Minister to ameliorate the social-economic status of the work-force in the country.

Power Production

IT IS PROPOSED to raise Power Production by 19,666 MW during the Sixth Five Year Plan.

Of this, 14208 MW will be thermal Power, 4768 MW Hydel Power and 698 MW nuclear power. So far 5928 KW additional power has been commissioned under the Plan. Atleast 1070 MW capacity is expected to be generated during 1982-83.

The country has a hydel power potential of 750 lakh KW of which about 11.33 per cent has been developed so far. A further 3 p.c. will be available when the schemes under construction are completed. The Sixth Plan envisages the enhancement of hydel power by 4768 MW through 43 hydel schemes

Development of thermal hydel units, known as "Mini" hydel projects is a part o the 20-Point Programme. They are particularly suited to remote and hilly areas. At present there are 77 such stations producing 135 MW. Fiftynine Mine Projects with an aggregate capacity of 153 MW are under construction, and 41 new projects with a capacity of 165 MW are under investigation.

A scheme to generate electricity from canal falls is under consideration.

Possibility of generating electricity from tidal currents is being studied at Kutch. The Rs. 218 lakh study will be completed in 1986.

Listening to Messages from Space

SCIENTISTS stationed in the United States have begun searching the skies with a 25-metre-diameter radio telescope with the hope of picking up messages from other intelligent life that may exist in the galaxy.

This four-year search for extraterrestrial intelligence (SETI) is being conducted from the Oak Ridge Observatory at Harvard University in Massachusetts by the University and the Smithsonian Institution.

A suitcase-sized receiver and a computer system capable of distinguishing a signal from the background radio noise of the universe are attached to the giant "mechanical ear". The receiver was designed by Paul Horowitz of Harvard. Horowitz and Carl Sagan, an astronomer at Cornell University, direct the project.

The receiver, simultaneously tuned to 128,000 channels, monitors the sky a section at a time and eventually will listen to 2,000 million of the 3,000 million stars in our galaxy.

Most scientists interested in the search for extraterrestrial intelligence agree that radio signals are the most likely messages to look for from extraterrestrial beings. Compared to other wavelengths, radio signals can cover the greatest distances with the least energy. The Oak Ridge radio telescope can detect signals sent from as far away as 1,000 light years. (A light year is the distance light waves travel moving at a speed of 300,000 kilometers per second, in a year's time.)

USICA □

Oilseeds development programme

OILSEEDS PRODUCTION occupies an important place in India's agricultural economy. The Government of India launched in 1969-70 a Centrally sponsored scheme called 'Intensive Oilseeds Development Programme' with a view to increasing the production of oilseeds in the country. The Programme Evaluation Organisation of the Planning Commission undertook in 1976-77 an evaluation of the Intensive Oilseeds Development Programme for examining the various aspects of implementation of the scheme, specially those of recommended package of practices and the impact of the programme on average yields.

The main contents of the programme under both the Central sector and the State sector schemes were popularising the basic oilseed production technology by way of improved varieties of seeds, fertiliser recommendations and plant protection schedules. Demonstrations and distribution of mini-kits were the more important extension methods advocated.

The objectives of the evaluation study in the main were :

(a) to assess the impact and adequacy of the programme and suggest steps for improving its effectiveness;

(b) to assess the adoption of the recommended package of practices and analysis of the factors for variations in the levels of adoption;

(c) to examine the adequacy of research support for the oilseed crops; and

(d) to examine the role of extension agencies and the availability of needed inputs.

Coverage of the Study

Seven oilseed crops, namely groundnut, rapeseed mustard, sesamum, castor, linseed, soyabean and sunflower, were covered under the Study in 13 major oilseed producing States. In these 13 States, 34 districts, 67 blocks, 201 villages and 2,132 beneficiaries were selected for detailed investigation through a multi-stage stratified sampling design.

General Findings

There are some basic constraints impeding acceleration of production of the oilseed crops in general and groundnut and rapeseed mustard, the two major crops in particular. These are (a) predominantly rainfed cultivation of these crops; (b) cultivation in soils of poor fertility; (c) high degree of susceptibility to post disease; and (d) adverse seasonal conditions resulting in sharp fluctuations in area and production. Even when the proportion of irrigated area to total cropped area in the country goes up, the share of oilseed crop is unlikely to register a perceptible rise because of competing cereal crops and more remunerative cash crops such as cotton, tobacco, chillies, etc. Considerable importance was given during the Fourth Plan and Fifth Plan periods for the development of oilseeds through the Centrally sponsored and State sector schemes. However, the present technology available in regard to oilseed development falls short of the requirements to insulate oilseed production from adverse seasonal factors resulting in severe fall in production and violent price fluctuations.

Suggestions

1. There is need to orient the development programmes for oilseeds in respect of (a) research, (b) extension and (c) organisation in order to overcome some of the basic problems mentioned earlier.

2. The long-term strategy for increasing the production of oilseeds may be oriented to tackle the most important constraint, namely rainfed cropping which makes cultivation of these crops highly sensitive to adverse seasonal conditions.

3. In spite of the stress laid on expanding irrigation facilities to oilseed crops in the various plans, there has not been an appreciable increase in the area under irrigation for these crops. The oilseed crops require light irrigation by way of one or two protective waterings, specially in the event of the failure of rains at crucial stages of crop growth. In the command area projects, areas demarcated under the category of 'irrigable dry' would be ideally suited (subject to the suitability of soils etc.) for the cultivation of oilseed crops such as groundnut, sesamum, castor etc. Hence, concerted efforts are required in such command area projects to bring larger areas under the Intensive Oilseed Development Programme.

Findings about Research Support

The 10 selected research centres on groundnut has so far evolved 28 varieties and all of these had been released for cultivation. Eighteen of these varieties released were reported to be popular with the cultivators.

Six out of 10 research centres had adequate facilities by way of building, laboratory and equipment. Seven centres had also adequate machinery but in respect of five centres farm land which is vital for carrying out field research was reported inadequate. In respect of two other centres, irrigation facilities were inadequate although possessing adequate farm land. Technical staff at Rajendra Nagar research centres (Andhra Pradesh) was reported to be inadequate.

For the research work on rapeseed mustard and other minor oilseed crops like sesamum, castor, etc. all the eight selected centres for these crops were engaged on plant breeding, entomology and agronomy. The research centre at Bhubaneswar (Orissa), however, did not report any research activity relating to entomology.

(*Contd. on page* 29)

Bank helps to bring cheers to rural poor

V.H. DESAI

IN THE KUNDUGOL TALUK of Dharwar District, two villages, Devanoor and Bilebal have been chosen by one of the nationalised banks to render financial assistance under the IRDP for 1982-83. These two villages have in between them a geographical area of 3,665 acres and a population of nearly 3,500.

Devanoor is a village which is perhaps unrivalled in the country for its cash crop of chillies. It grows abundant chillies which are longish, reddish and tasty too. When eaten with fingers the chutney and other hot preparations made out of Devanoor chillies, the red hue lingers longer on the fingers even after wash.

The smell of chillies grown in Devanoor is exciting. The soil experts believe that the beautiful harvest of Devanoor variety of chillies is due to a belt of phosphate—rich soil that runs through the area. This nature's gift of this soil has made chillies of Devanoor unique in the whole country.

The chillies of Devanoor have of course turned the local land owners into an affluent lot. Because chillies of Devanoor are sold at Rs. 150 to 200 more per quintal than any other variety in the country. Hefty stacks of chillies that dot the outskirts of Devanoor are but a poor solac to the agricultural labour and poor of the village. There are many who are below the poverty line in the village. The Kundugol branch of Syndicate Bank established close contacts and extended financial help to the families in this village, identified under IRDP programme, by the DRDS of the Dharwad District.

During 1982-83, this branch extended loan assistance of Rs. 1,77,200 to 53 families of Devanoor. The beneficiaries included petty shop keepers, tongawalla, etc. For sheep-rearing and dairy development, a few others have been given financial help. From the 400 families in Devanoor and Bilebal villages nearly 50 persons were given loans under the IRDP programme for 1982-83. It meant almost one-fourth of the families received help by the Bank. The recoveries of the loans are smooth and steady in these two villages. This fact has emboldened the bank authorities to extend their area of operation to cover more families identified to receive the financial help. Devanoor and Bilebal villages belong to that category of villages where the two-way traffic of receiving loans and returning loans is advantageously in operation bringing cheers both to beneficiaries and the bank. ☐

A craft that thrives

E. VASU

SIVANANDAN is a traditional artisan settled in Kodumbu, a village on the outskirts of Kerala-Tamil Nadu. He has been making idols for the last 25 years, using paper powder, plaster of paris, cement and chalk powder. Though his idols were being sold in the show rooms of handicrafts empored, Sivanandan used to get only a meagre sum due to the various middlemen for whom he worked on daily wages.

The formation of District Rural Development Agency in Palghat District came to his notice. Now Sivanandan thought of starting an 'Arts Centre' of his own. He constructed his workshed using a loan of Rs. 9,000 from Indian Overseas Bank, Palghat Branch and a subsidy of Rs. 2,200 from Kollengode N.E.S. Block. Now, he is having a place on the roadside to sit and work.

Sivanandan has agreed to train five youngmen in idol making as per 'TRYSEM' for which selection of persons was made by District Rural Development Agency, Palghat. He will get per month an amount of Rs. 500 for training them. He has now applied for a loan of Rs. 6,000 for developing the centre. ☐

Loan lights life

KARNATAKA STATE GOVERNMENT released 1500 acres of forest land for cultivation a decade ago in Kalaginakoppa (Halliyal taluka of N. K. District). One of the beneficiaries was Sri Basavannappa Rachappa Loni. He had toiled in others land for many years having walked barefooted, from Sholapur as a daily labourer in and around Sambrani village of Halliyal taluk.

Obtaining the land for cultivation was not enough. He had no bullock. Loni was very much under the clutches of poverty till his village was selected as 'cluster village' under DRDS Scheme. He was one of the 250 persons identified to get the loan to buy buffalos last year.

With the loan extended under this scheme by the nationalised Canara Bank, Loni bought two buffalos and could sell 3 litres of milk per day. Wise spending and saving resulted in prompt repayments and he bought a sewing machine. His house is full of activity. He goes away to field while his wife runs the house and takes care of the buffalos. His daughter works at sewing machine and his two sons provide general assistance. A borrower gradually goes bankrupt is an old adage. But if loan is utilised properly and repayments are prompt as illustrated by Mr. Loni one can prosper by taking loans.

K. R. Prahallada
Field Publicity Officer
DHARWAD

More Power For The 'Seven Sister'

THE SEVEN NORTH-EASTERN STATES together are termed as the 'Seven Sisters'. Brahmaputra and her mighty tributori meander through the undulating terrain, making the potential for hydel power generation in the area one of the greatest in the world. Known hydel power potential from already located sites alone is around 21,000 MW.

Kopili Hydel Power Project, the initial phase of which is almost complete, is the first major attempt to tap this enormous power potential for the development of the region. When completed, it is envisaged to have a capacity of 150 MW.

Located on the Assam, Meghalaya border, about 100 KM away from Shillong, the project spreads over an area of 400 Sq. Kms. It aims at harnessing the water of Kopili River and Kumong River to produce electricity. Two dams at Khangdong and Kumrong and two power houses at Khongdong and Kopili form the core of the project. Estimated to cost Rs. 119 crores, the foundation stone of the project was laid in 1976. More than 80 p.c. of the capital cost has already been spent.

Transmission lines to carry Kopili power to Assam Meghalaya, Manipur, Mizoram, Nagaland and Tripura have already been laid. Another transmission line to supply power to a cement plant at Tiding and a Paper Mill at Bhalukphung in Arunachal Pradesh is being laid at a cost of Rs. 10.10 crores.

The two concrete gravity dams on the two rivers can store in their reservoirs 1,50,000 acre feet of water. Attempts are being made to reduce seepage so that storage capacity can be increased to raise the potential of the project to 500 MW. It would also help reduce the cost of power generation.

NEW HYDEL SCHEMES

Four new hydel schemes are under various stages of investigation and construction in Arunachal Pradesh. First one is the Ranganadi Hydel Scheme in Subansiri District, capable of producing 500 MW of power. Its first unit is expected to be commissioned in 1989-90. Another is Damwe Scheme across River Lohit in Rohit District. It is planned to produce 400 MW of power, when it is commissioned in 1991-92. The third is the Pappu Scheme across River Pappu in Kameng District. As a run off river scheme it is planned to produce 15 MW of power. The Dovang Project in Nagaland will have a capacity of 105 MW.

THERMAL PROJECT

In the Garo Hills region a Thermal Project also has been planned, based upon the locally available coal. It consists of two units of 30 MW each. The development of the coal mines for this project will be done by Coal India Ltd. The Border Roads Organisation has been entrusted with the consruction of the roads for the project.

The North Eastern Region has huge deposits of various minerals such as oil and coal. The land is fertile with thick forests and plenty of water. When the power potential of the region is properly developed, it may well become the power house of the nation. Integrated, efficient exploitation of this power potential has been entrused to the North Eastern Electric Power Corporation Limited, a Government of India enterprise.

(*Contd. from page* 27)

In all 88 varieties have been evolved by these eight centres, of which 22 were for rapeseed mustard, 26 each for castor and sesamum and the rest for other minor oilseed crops. Sixty-five out of the 88 varieties evolved had also been released for cultivation. Fifty-five of these varieties had reportedly received favourable response from the cultivators.

Six of the eight selected research centres reported adequate farm land but facilities such as laboratory, building, etc. were far from satisfactory in many of these centres. However, in many of these centres qualified and experienced technical staff were reported to be functioning.

Recommendations

1. Evolving of high yield varieties as in the case of cereal crops of wheat and paddy is the most urgent need if an early breakthrough in the cultivation of oilseeds crops is to be achieved. In evolving such varieties, the basic constraint viz., the predominant cultivation of these crops under rainfed conditions needs to be taken note of.

2. It is also necessary to strengthen the infrastructural facilities for some of these research stations specially in respect of irrigation, laboratory, equipment, machinery, etc. □

(*Continued from page* 12)

We have, therefore, to continue our efforts in various directions, that is, to improve the data base and the assessment machinery for making inter-sectoral comparisons and industry-wise analysis, to make tourism and hotel organisation more profitable and commercially oriented so as to be able to invest more in their own development and growth and finally to strengthen the overall resource generation efforts in the country's economy by better productivity so that tourism and civil aviation sectors can also get a larger share of resources and fiscal incentives that in the past. □

SARDAR VALLABH BHAI PATEL AWARD SCHEME

For books (Original or Translated) in Hindi in the fields of Public Administration and Management Sciences

To encourage the production of standard literature in Hindi language in the fields of public administration and management sceinces, the Govt. of India has initiated a Scheme entitled Sardar Vallabh Bhai Patel Award Scheme for rewarding standard books (original or translated) in Hindi in the fields of public administration and management sciences including, inter alia, economic development, economic administration and development administration, etc.

AWARDS : Three Awards for ORIGINAL books in Hindi in above fields——

FIRST PRIZE-RS. 10,000/—
SECOND PRIZE-RS. 7,000/—
THIRD PRIZE-RS. 5,000/—

Two Prizes for TRANSLATIONS into Hindi of standard original books in these fields written in languages than Hindi.

TWO PRIZES-RS. 3,000/- (each)

The decision regarding awards will be taken by an Evaluation Committee whose decision will be final. All or any awards may not be given if the Evaluation Committee finds no entry meriting award.

ELIGIBILITY : The scheme is open to all persons excepting those employed in the Department of Personnel & Administrative Reforms. The books/translations published written in 1982 (January-December) only will be entertained, Manuscripts/unpublished books will also be considered. However, the payment of awards will be made after their publication.

LAST DATE FOR ENTRY : The last date for receipt of entries is 15th June, 1983. The Entry Form and further details may be had from Under Secretary (Admn.) Department of Personnel & A.R. 5th Floor, Sardar Patel Bhawan, Sansad, Marg, New Delhi-110001.

davp. 83/19

Economic Notes

Target for rural drinking water exceeded.

BY THE END OF February 1983, 35,582 problem villages all over the country had been provided with drinking water supply facilities. The coverage of problem villages during the year 1982-83 upto the same date amounted to 104 per cent of the target set for the year. The targets have been fulfilled in Uttar Pradesh, Karnataka, Andhra Pradesh, Sikkim and Rajasthan.

During the said financial year the approved outlays under State and Central Sector Plans for rural water supply is Rs. 261 crores and Rs. 151.5 crores respectively.

ECC wins top exporter award

ENGINEERING CONSTRUCTION Corporation Limited (ECC) has been awarded the top exporter shield for Civil Engineering by the Engineering Export Promotion Council, Western Region. The award was received by Mr. H. J. Amin, General Manager, Overseas Operations, ECC from Mr Vasantdada Patil, Chief Minister of Maharashtra, in Bombay recently.

According to the citation by the Export Promotion Council, ECC's jobs executed overseas include the construction of the International Airport Terminal Complex in Abu Dhabi, design and construction of a Silo and prill tower in Sri Lanka for a fertiliser complex, and offering consultancy services to Yemen Dairy at Hodeida in North Yemen.

ECC, a wholely owned subsidiary of Larsen & Toubro Limited, is currently executing foreign contracts totally Rs. 800 million including the Police Headquarters complex in Baghdad, a stadium and a border customs and immigration complex elsewhere in Iraq and mechanical erection jobs in Kuwait.

More than 13 lakhs telephones to be provided in sixth plan.

The Posts and Telegraphs Department has set a target of providing 13.3 lakhs of telephone lines in the country during the Sixth Five Year Plan period. 3,85,374 telephone connections have already been provided upto February this year.

Sone Embankment scheme for flood control

THE PLANNING COMMISSION has approved the revised estimate of Rs. 4.3 crores for the Sone Embankment flood control scheme.

The scheme envisages construction on the left bank of the Sone of a new 15 Km. embankment from Patna- Arrah to Nansagar, raising and strengthening of the existing Trikol bundh, the Koilwar distributory and of the Arrah Canal. On the right bank of the Sone, it provides for raising and strengthening of the Patna Canal and of the Amra distributory and a new embankment connecting the Patna canal and the Amra distributory.

The flood control scheme is expected to protect 30,000 hectares of land in Bhojpur and Patna districts in Bihar.

Road safety council at centre and state levels

THE COMMITTEE ON PLANNING for Road Safety has, in its report submitted to the Ministry of Shipping and Transport, expressed the view that Road Safety needs be tackled as a National effort. It has observed that such a national effort "would be successful only if safety consciousness is cherished as a value, practised as a behaviour, sustained as an attitude and preserved as a way of life".

The Committee is of the opinion that a fairly long period would be needed to create proper climate for road safety and has suggested National Road Safety Council at the Centre with a chain of Road Safety Councils at State and district level. The Committee has noted that no specific budget provision existed for integrated road safety schemes and has recommended creation of a National Road Safety Fund under the overall control of the Ministry of Shipping and Transport.

BHEL's turnover crosses Rs. 1000 mark

BHARAT HEAVY ELECTRICALS LIMITED crossed a turnover of Rs. 1000 crores and earned pre-tax profit of Rs. 60 crores in 1982-83. The turnover of Rs. 1170 crores is Rs. 40 crores more than the budgeted target for the year and represents a growth of about 24 per cent over the previous year.

Profits have been registered for the 12 years in succession. In addition Rs. 330 crores including Rs. 22 crores income-tax have been contributed during the year to the National Exchequer.

In terms of power generation BHEL built equipment added about 3000 MW to India's installed capacity in 1982-83 capable of providing electricity to 30 million rural households. BHEL's 210 MW sets at Vijayawada and Parli Thermal Stations recorded international performance registering an utilisation factor of 100 per cent.

Country's first 500 MW set is scheduled to be commissioned at Trombay (Maharashtra) by the end of this year. Five 500 MW turbine-generator sets and boilers are being built by BHEL for Super Thermal Power Stations at Singrauli and Korba

BHEL has taken three major steps to ensure continuous power supply from sets supplied not only by BHEL but also those imported by State Electricity Boards.

Increase in fish production and record exports

IN SPITE OF severe cyclones, which lashed Orissa, Gujarat and Maharashtra during the last monsoon disrupting fishing activities, India has registered an increase of about six per cent in marine fish landings during the current year as compared to the previous year's production of 13.78 lakh tonnes. Production during the current year is estimated at 14.26 lakh tonnes. Production in 1980-81 was only 12.50 lakh tonnes.

The total production of fish during 1982-83 is estimated at 24.5 lakh tonnes compared to 24 lakhs tonnes in 1981-82.

This has helpd in raising the export of marine products in 1982 to a new peak of Rs. 342 crores in 1980. This increase of about 20 per cent is attributed to forward looking marine fishing policy adopted in the recent past.

Lower Dudhna Irrigation project approved

The PLANNING COMMISSION has approved the Lower Dudhna Irrigation Project in Maharashtra. Estimated to cost Rs. 53.20 crores, the project envisages a 4,700 metre long and 25 metre high earthen dam, a masonry spillway and two lined canals. It provides for a gross utilisation of 12.68 TMC of Godavari water to irrigate an area of 36,733 hectares in Parbhani district of Maharashtra.

HUDCO sanctions 129 new housing schemes

THE HOUSING AND URBAN Development Corporation (HUDCO), a Government of India Enterprise has sanctioned 129 new housing projects with HUDCO loan commitment of Rs. 54.15 crores. The project cost of these schemes is Rs. 80.62 crores, and will enable construction of over 59 thousand residential dwellings and development of about 8,000 plots spread over 52 towns and cities in 14 States and rural areas of Gujarat, Madhya Pradesh, Punjab and Rajasthan.

With these new loans HUDCO has achieved the target of loan sanctions laid down for it for the year 1982-83. HUDCO loan sanctions during 1982-83 stands at Rs. 221.36 crores against the target of Rs. 220 crores.

Crop insurance scheme to be expanded

IT HAS BEEN decided by the Government in consultation with the General Insurance Corporation of India and the State Governments to increase considerably the coverage under the crop insurance scheme. The target for insurance coverage in physical terms for 1983-84 has been fixed at 1.50 lakh hectares and for 1984-85 at 2.10 lakh hectares. In monetary terms the target for 1983-84 is Rs. 15 crores and for 1984-85 Rs. 21 crores.

The total coverage under the Crop Insurance Scheme during the last three years has been 1.01 lakh hectares. It is proposed to cover an area of 3.60 lakh hectares in the coming two years as against 1.01 lakh hectares covered during the preceding three years.

Tit-bits from Parliament

Training institute for Irrigation engineers proposed

THE MINISTRY of Irrigation is considering a proposal for setting up of a training institute in the Central Water Commission to provide induction training and in-service training to the engineers and scientists of the Central Water Commission and the Central Ground Water Board.

Recognising film production as industry

THE STATE Governments have been requested to consider the possibilities of recognising the film production and theatre construction as small scale industry as has been done by the Governments of Bihar and Orissa to encourage production of small budget films and construction of mini-theatres.

Under a theatre construction scheme of the National Film Development Corporation, a public sector undertaking of I&B Ministry, the Canara Bank has made available Rs. 1 crore for theatre construction. The Corporation has also been negotiating with other banks for loan for this activity. In addition, the NFDC also provides loans to producers for financing films in deserving cases, up to a ceiling of Rs. 8 lakhs per film.

Preparing Ex-servicemen for self-employment

A NEW SCHEME for preparing ex-servicemen for self-employment (PEXSEM), has been introduced by the Ministry of Defence on a pilot basis from April 1 this year. Under the scheme retiring and retired JCOs and ORs will be given training in different trades to enable them to establish their own self-employment ventures in rural areas. The trades in which training is imparted will be selected in keeping with the interest and motives of ex-servicemen on the basis of vocations specified.

Increase in fertilizer output

AS A RESULT of concerted efforts made by the Government, the fertilizer industry has recorded a significant achievements. The production has gone up and as a result there has been a substantial decrease in the imports of fertilizers, resulting in a large saving of foreign exchange.

In 1982-83, the production of nitrogenous fertilizers registered an increase of nine per cent over the previous year. As against a production of 31.4 lakh tonnes in 1981-82, the production of nitrogen in 1982-83 has been 34.2 lakh tonnes.

The production of phosphatic fertilizers increased from 9.5 lakh tonnes in 1981-82 to 9.8 lakh tonnes in 1982-83.

Books

Organisational Consultancy

Consultants and Consulting Styles, Edited by Dharni P. Sinha; published by Bision Books Private Limited, New Delhi-110001; pages 248; Price Rs. 90.

MANAGEMENT is the art of coordinating the elements or factors of production of a business organisation. The factors of production include land, labour, capital and coordination. The management and administrative function is a major element of coordination. For administration and management to function effectively, there must be a proper structuring of the enterprise. This is organisation, which is necessary to, but distinct from both administration and management. Management is now seen as the carrying out the policies of administration through the framework of organisation.

In view of the complexity of modern business and other enterprises, organisational consultancy is being recognised today as an important tool in managing change and improving the effectiveness and performance of business in a complex and rapidly changing environment. It applies systematic behavioral science knowledge for diagnosing and restructuring organisations, team-building, regulating inter-group activities, evaluating survey feedback, increasing managerial effectiveness, helping negotiations, planning etc.

The volume brings together the writings of distinguished business consultants and behavioural scientists from various parts of the world, explaining their values, their approach and their choice of interventions in different types of situations in the organisations they tended. It would appear from the various essays in the book that the main objective of the consultant's effort is to enhance the human and organisational capabilities of the client system, and that consultancy is a collaborative activity requiring mutual influence between the consultant and the client.

The role of the organisational consultant is getting expanded due to the complexities of the fast changing environment. He should now be able to understand the implications of newer technologies, and their effects on living styles and thinking of the masses, aspirations of the new generations, and the inter-play of various social factors to be able to help organisations develop to their fullest extent. In view of this, he has to play the role of a wise counsellor who can use particular techniques and methods with humility which comes from wisdom.

The book is a valuable addition to the literature of the consultants and consulting styles, and will be extremely useful for students and teachers of management, managers, and administrators, and for those engaged in the profession of organisational consultancy Dr. Sinha, who is an expert on Management Development and organisational consultancy, deserves to be complimented for bringing together, in a single volume, the experiences and views of experts from various countries on a rather newly developing and difficult subject.

S. N. Khanna

Agricultural Extension Services

Management of Agricultural Extension by Prakash M. Shingi, Sanjay Wadwalkar and Gurinder Kaur: Centre for Management in Agriculture, Institute of Management, Ahmedabad; CMA Monograph No. 96: pp 110 + vi; Price Rs. 52

DURING the last thirty years a number of experiments have been made to make agricultural extension services in India more effective. The latest of this attempt is the 'Teaching and Visit' (T & V) system introduced in the country during the last decade. One such project was started with the assistance of the World Bank at a cost of Rs. 23.90 crores in 1977. Consisting of four components, namely, agricultural extension, training, agricultural research, and monitoring and evaluation, the Project is being implemented in seventeen districts having 2.9 million farm families and 9.55 million ha of cultivated area. The Monograph summarises the results of the survey conducted to study the T & V approach. The period of the survey was 1976—80, and included discussions with the Project officials at various levels.

As mentioned in the Monograph, "the T&V approach is not a contribution to the original concept of extension per se, or a philosophy behind it; it only introduces changes, albeit innovative, in the administration of extension. ..... Therefore, the administrative structure, its internal processes, and the officials themselves would eventually decide the fate of it, "There is also difference in the approach of the 'old' (or, experiences) and 'young' (or, in-experienced) staff.

The role of the T & V system in increasing agricultural production is doubtful, as according to the Monograph "While trends are encouraging, they cannot be used to justify such claims. Nevertheless, a beginning has been made." This approach, like a number of other programmes adopted for increasing agricultural production "is basically suited for regions having assured irrigation", and is yet to be seen "how it fares in regions prone to droughts and floods, or at times for rainfed agriculture." This is the crux of the problem and acid test of any scheme because in India about 70 per cent of the farmers in India do not possess assured irrigation facilities. The last chapter on Assessment could include some factual information indicating increase in production as compared with those envisaged in the Project. Formats for Built-in Planning, Monitoring, and Evaluation given as Appendix are elaborate and useful.

Vidya Sagar

Indian Drama

Indian Drama; Publications Division, New Delhi; pp. 158; Rs. 12.00

THE VOLUME embraces a set of critical articles on development of drama in fourteen important languages of India including those of national relevance namely, Sanskrit, Hindi and Urdu. The articles coherently enough deal with the time to time literary trends and traits of drama wedded to its theatrical exposition, bringing into focus the relevant features of music and dance where necessary. The authors selected for contributing the articles are prominent men of proven familiarity with the subject and it cannot be gainsaid that they have acquitted themselves creditably as much as the editorial outfit of the Publications Division has been discreet in handling the material placed at their disposal. The volume has the distinction of a synoptically compact introduction and a culminating piece reflecting the post-independence phase.

Although it is difficult to imagine or anticipate whether drama and its theatrical development in India will ever peculiarly come to its own, the fact remains that in regard to most of the languages Sanskrit has been the veritable forerunner in the dramatic scene of the middle ages as much as for its embryonic postulates which it has afforded to those languages. The contemporary scene is likewise a confluence of several historical, cultural, social and political influences imbibed from Muslim and European hegemony. The articles skinfully dwell upon these aspects and in the process invite the general reader to make a panoramic survey of drama of modern India as a whole.

The volume is a simple but attractive paper back priced moderately.

—Badli Vidyarthy.

Economic Development

Indian Economic Development : Retrospect and Prospect by Shrinivas Y. Thakur, New Delhi, Sterling, 1982. pp. 210 + Index (Hard bound) Price : Rs. 80

THE BOOK UNDER review is claimed to be a revised and enlarged second edition of its first edition that appeared in 1978. The book evaluates the experience of three decades of planning in the country. The first chapter gives a plan wise review of the strategies of all the Six Five Year plans. The remaining four chapters are concerned more with a description of the Sixth Plan strategies. The book which can be treated only as a text book, may serve the interests of the students only partially.

The author observes in his preface to the first edition that as a consequence of the faulty strategy of economic development pursued by our planners during the last over quarter of a century, India's economic status in the comity of nations has worsened; the incidence of poverty increased and the growth rate of national income had been dismal.

The original edition was written during the Janata phase; then the author noted; "The Janata party which has taken over the reins of government at the Centre from Congress since March 1977 has shown itself alive to the needs of drastic change in the plan strategy". As the revised edition of the book was prepared recently, one expects, particularly in a book concerned largely with Sixth Plan strategies, a comparative analysis of the Janata and the Congress Sixth Five Year Plans; but the reader would be totally disappointed, having found nothing of this kind. To be qualified as a good text book, it should have covered the plan strategies also with regard to industrial and service sectors.

Thus while one gets disappointed for its lack of comprehensiveness and integrated outlook of Indian planning, the analysis attempted on growth of agriculture and growth of national income is however indepth and one finds it quite useful.

Jandhayala B. G. Tilak

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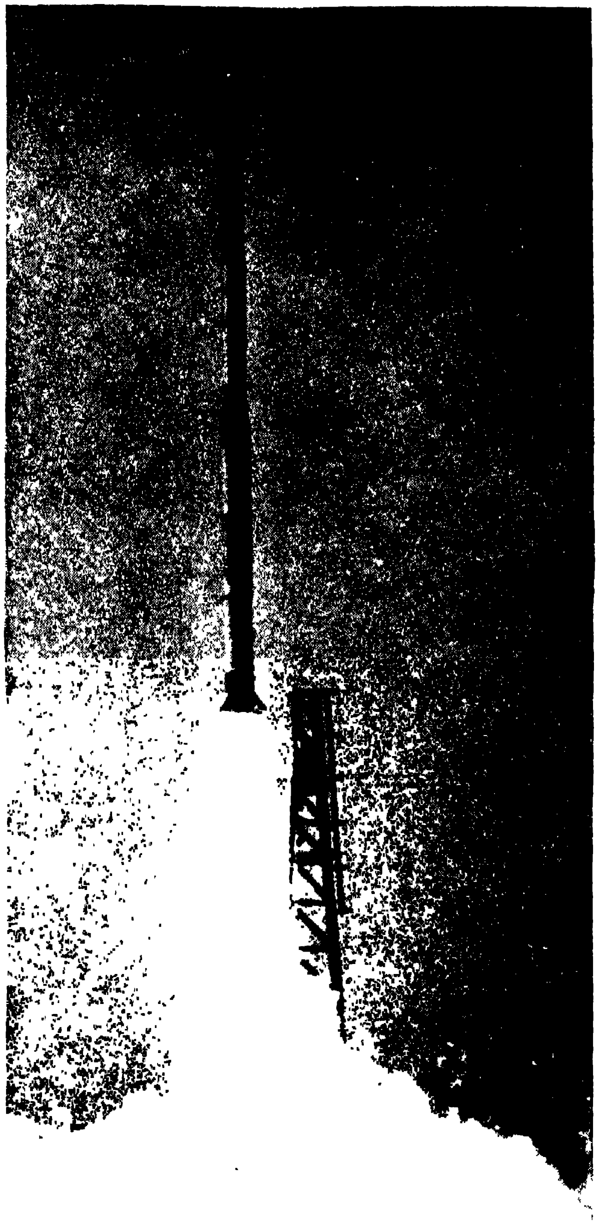

orbit of RS-D-2 has been updated and it is found to be 389 Kms. by 851 Kms. with a period of 97.1 minutes. The satellite is expected to be in orbit for over a year. It completes 14 orbits per day.

The successful launch of SLV-3-D-2 has established a firm base of Launch Vehicle Technology which will directly feed into the larger launchers, i.e., the Augmented Satellite Launch Vehicle (ASLV) and the Polar Satellite Launch Vehicle (PSLV) currently under development.

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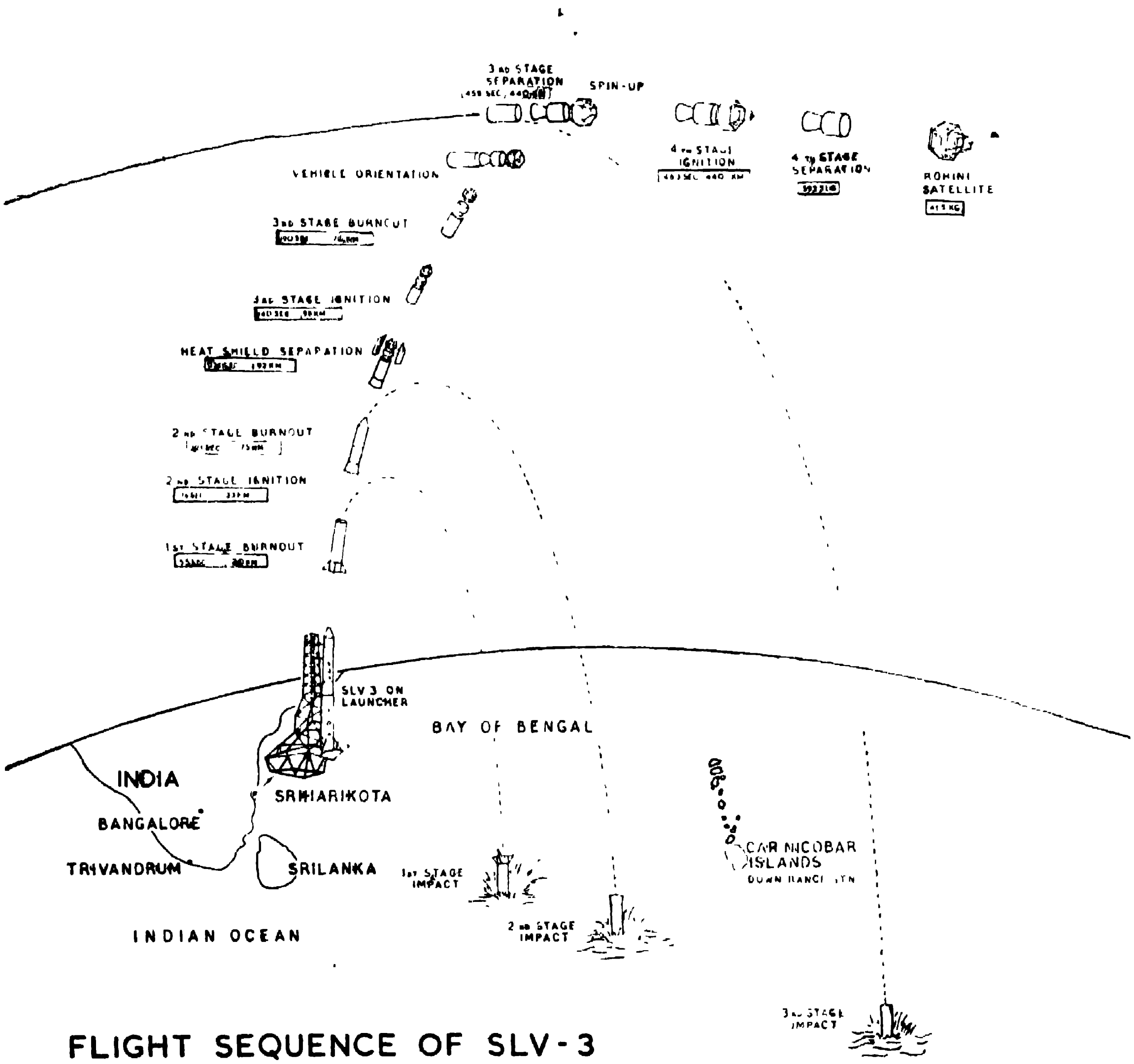

FLIGHT SEQUENCE OF SLV-3

Shri Shivaraj V. Patil, Minister of State in the Departments of Science & Technology, Atomic Energy, Space, Electronics and Ocean Development in a statement made in the Rajya Sabha said: "All these developments will help our space scientists and technologists in putting in orbit our own satellites which will be able to do remote sensing and similar applications which will ultimately help in studies of monsoons, resources on the land and in the sea etc, which will be of great help to our people, particularly our farmers."

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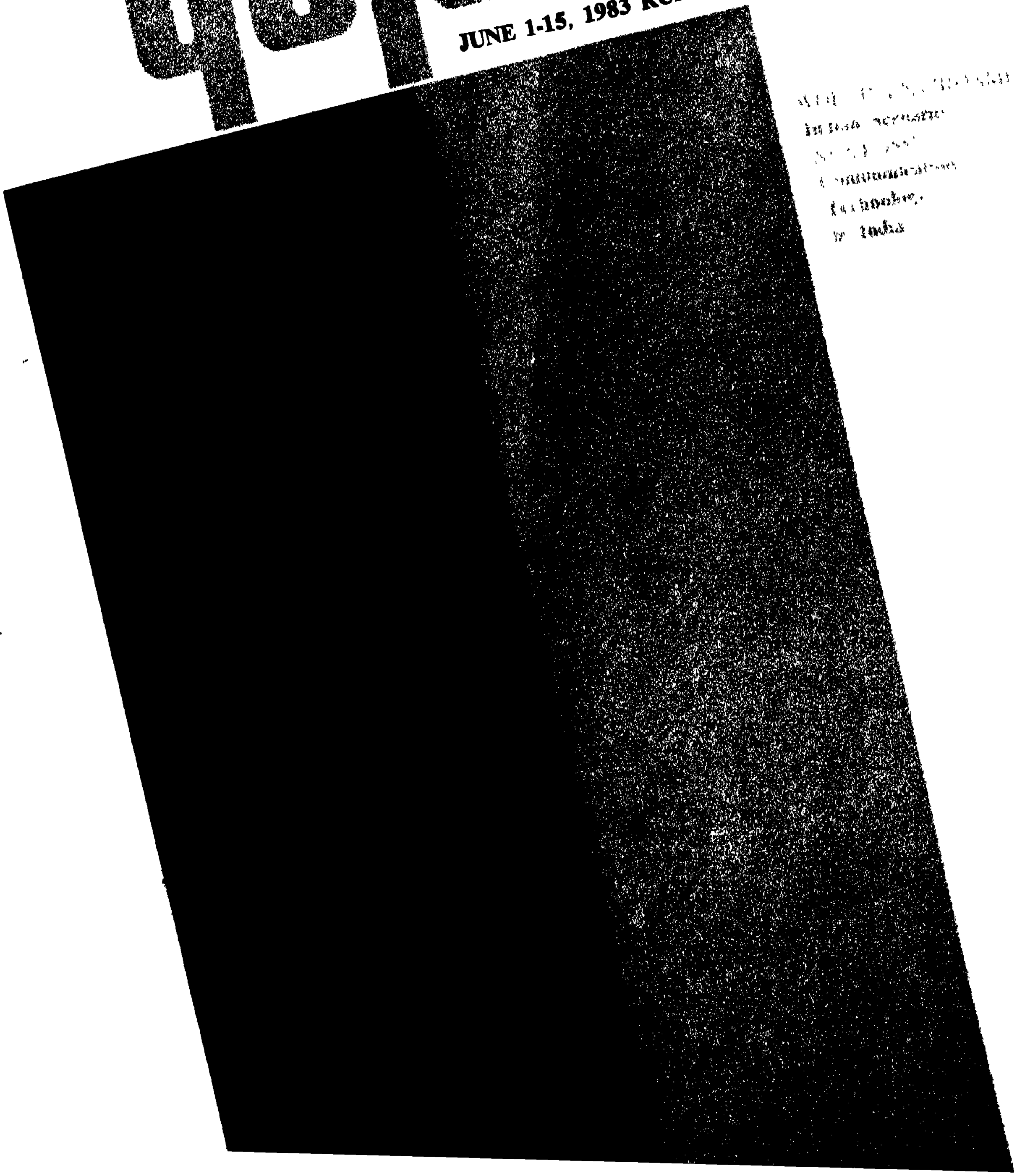
Tourism in India

VOL. 27 NO. 10

yojana

JUNE 1-15, 1983 RUPEE ONE



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Communication
technology
in India

The 20-point programme monitoring cell reports. . .

13

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The sixth plan document has laid down the goal of reducing the birth rate to 21, the death rate to 9 and the infant mortality rate below 50. To achieve this target, the percentage of couples practising family planning should go up from 22.5 per cent to 36.5 per cent by 1984-85. As against a target of 44.6 lakh sterilisations, 32.99 lakh sterilisations were performed till the end of March, 1983.

State-wise performance above 50 per cent of the required average is given below :—

State	Target	Achievement April 82 to March 83	% achieved
Sikkim	**300**	**432**	**144.0**
Punjab	**1,02,000**	**1,35,103**	**132.5**
Maharashtra	**4,73,000**	**6,07,839**	**128.5**
Himachal Pradesh	**26,000**	**33,451**	**128.4**
Haryana	**84,000**	**86,208**	**102.6**
Tamil Nadu	**2,92,000**	**2,86,217**	**98.0**
Gujarat	**2,60,000**	**2,41,519**	**92.9**
Andhra Pradesh	**3,91,000**	**3,30,114**	**89.6**
Kerala	**1,60,000**	**1,38,265**	**86.4**
Madhya Pradesh	**3,82,000**	**3,22,597**	**84.4**
Bihar	**4,18,000**	**3,49,768**	**83.7**
Orissa	**1,74,000**	**1,42,337**	**81.8**
Rajasthan	**2,15,000**	**1,66,602**	**77.5**
Karnataka	**3,05,000**	**2,32,423**	**76.1**
West Bengal	**3,57,000**	**2,55,153**	**71.5**
U.P.	**6,21,000**	**4,30,169**	**69.3**
Assam	**91,000**	**52,705**	**57.9**

YOJANA

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June 1—15, 1983/26 Jyaistha 11—25, 1905

World Environment day

B. B. SUNDARESAN & P. V. R. SUBRAHMANYAM 4 Indian scenario of hazardous wastes

K. K. SRIVASTAVA 7 Tourism in India

G. RAVINDRAN NAIR 10 Potable water for better child health

RAJIV GIRORTRA 12 How appropriate is appropriate technology

DR. D. P. S. VERMA 14 Consumer protection under the MRITP Act.

DR. B. M. JAIN 17 U.S. food aid to India, a realistic view.

PROF. P. K. JENA 20 Reorganising educational system for better standard of living

33 Books .

OUR CONTRIBUTORS 34

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Yojana seeks to carry the message of the plan to all sections of the people and promote a more earnest discussion on problems of social and economic development. Although published by the Ministry of Information and Broadcasting, Yojana is not restricted to expressing the official point of view. Yojana is issued every fortnight in Assamese, Bengali, English, Gujarati, Hindi, Malyalam, Marathi, Tamil, Telugu and Urdu.

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Subscription : Inland : One year Rs. 20, Two years Rs. 35, Three years Rs. 50. Foreign : One year $ 6 or £ 3 : Two years $ 10.50 or £ 5.25 : Three years $ 15 or £ 7.50 Single Copy $ 0.30 or £ 0.15.

Indian scenario of hazardous wastes

Toxic wastes from a variety of industries find their way into the atmosphere, water sources and the food chain. In India, as in developing countries generally, there is little control over such pollution of the environment. There is, in fact, no mechanism by which even information of hazardous waste disposal can be had, say the Director and his colleague of the National Environmental Engineering Research Institute.

B.B. Sundaresan and P.V.R. Subrahmanyam

Industrial activity is increasingly releasing gaseous, liquid and solid wastes which are traditionally discharged to the atmosphere, water bodies, including ocean fronts, or to land, considerably affecting the environment. Toxic and hazardous wastes from, for example, manufacture of pesticides, basic organic chemicals, fertilizers, dyes and pigments and iron and steel, endanger public health.

In industrialized countries, toxic substances have been observed in drinking water sources, aquatic food chain and the atmosphere. Public awareness and environmental regulations restrict discharge of toxic waste. But strict enforcement and high cost pollution control have led to some multinationals moving such factories to developing countries under the guise of aid.

Third World countries, already suffering from poor sanitation and water-borne diseases, would thus, be exposed to chemical poisoning as well unless provided with effective mechanism for screening industries. More than 2,000 chemical substances have been identified in water bodies; and of these, over 700 have been found in drinking water sources. About 50 of these substances have been identified as carcinogens. They could not have found their way into water bodies other than from industrial activity or agricultural practice.

For the Third World, anxious to industrialize quickly, the problem, indeed, is urgent, for, as is pointed out in Health Aspects of Chemical Safety, Interim Document 7, Hazardous Waste Management WHO and UNEP, 1982.

"Little is known about hazardous waste problems in developing countries either with regard to the nature and geographical distribution of the waste or the effect of extreme climatic conditions, such as desert, drought, extreme heat and high humidity or floods, on disposal options. Research and development work are urgently required to develop technologies appropriate for both short and long-term efforts:

Identification and handling of existing open dumps containing hazardous wastes: how can these dumps best be closed without posing problems in the future ?"

The growth (table) in India of a few selected industries which release hazardous substances which are not biologically degradable indicates the increasing seriousness of the problem.

Growth Pattern of some Industries in India

	Production x 10^3 tonnes			
	1950	1960	1970	1980
Pesticides	N A.	1.46*	3.00	40.68
Dyes and pigments	N.A.	1.15	13.55	30.85
Pharmaceuticals	0.25@	1.23	1.79	5.07
Organic chemicals, including petrochemicals	200	580	17,100	24,100
Fertilizers (Nitrogenous & phosphatic)	18	153	1059	3005
Steel ingots	1.5×10^3	3.4×10^3	6.5×10^3	8.0×10^4
Non-ferrous metals:				
Copper	N.A.	8.50	9.30	18.80
Lead	N.A	N.A.	1.86	11.40
Zinc	N.A.	N.A.	23.41	52.70
Caustic soda	11	101	304	457

*DDT only; @value for the year 1952. N.A.—Not Available

One of the episodes that made the problem felt in India was when the river Ganga was set ablaze near Monghyr, Bihar, in 1968. It was the oil discharged with effluent from the Barauni Oil Refinery that had caught fire. This resulted in the closure, for a time, of the refinery and suspension of water supply to the town. Other episodes that followed include a large-scale fish kill in the estuary near Goa due to the discharge of waste water containing ammonia and arsenic from a nitrogenous fertilizer factory, pollution of the river Damodar due to discharges from steel and chemical industries in Bengal and increase in the acidity of the Kalu river near Kalyan, Bombay, due to the discharge of untreated waste waters from dye factories. Large-scale use of chemicals to protect crops from pests, insects and fungi and to control vectors of diseases, in developing countries, has become a source of serious concern. Some non-biodegradable chemicals, even in small concentrations, pose a serious threat to human health because of the biomagnification in the food chain, including fish and plants.

The phosphatic fertilizer industry and thermal power plants produce large quantities of waste. Semi-solid and solid residues in smaller, but highly toxic, quantities are produced in the manufacture of (i) pesticides, (ii) dyes and pigments, (iii) fertilizers, (iv) chromates, (v) organic chemicals, (vi) acrylonitrile, (vii) steel, (viii) engineering goods, (ix) metals, and (x) caustic chlorine.

Phosphatic fertilizers

During 1980, 11 major phosphoric acid and di-ammonia phosphate plants released 3.5 million tonnes of by-product phosphogypsum (BPG). The major part of the BPG is being disposed of either by landfilling or lagooning in slurry form without adequate precautions against seepage into ground water or overflow into surface water in the rainy season. In addition to fluorides, cadmium, chromium, copper, lead and manganese, BPG also contains 29 pCi radioactive materials per gm dry weight.

Power Houses

Of the total electric power generated in India, 57 per cent is contributed by coal-based thermal power stations. Nearly 16.6 million tonnes of fly ash was generated during 1980 by thermal power plants with an installed capacity of 16,470 MW. This fly ash contains heavy metals, such as zinc, barium and copper. The current methods of disposal of fly ash include dry dumping and slurry ponds. The supernatant liquid joins the adjoining water courses. When disposed of in low-lying areas, the leachate percolates into the ground water. The extent of leaching depends on the form in which the toxic metals are present, pH of water and soil strata

Pesticides

Chlorinated pesticides, such as DDT and BHC, are in common use. In recent years, organophosphorus pesticides and carbamates also have been made in limited quantities and used mostly in agriculture. The annual production of DDT presently stands at 14,000 tonnes. For every tonne of DDT produced, the waste water discharge contains 185—480 kg of sulphuric acid; 3.3—3.5 kg of suspended solids; 134—265 kg of COD and 0.91—1.2 kg of DDT. The waste waters are normally treated with lime and subjected to settling; and the sludge produced contains about 0.05 per cent DDT on dry basis.

Production of hexachlorocyclohexane (BHC) is of the order of 41,000 tonnes per year; and 3.8 kg of sulphuric acid, 1.2 kg of suspended solids, 4.7 kg of COD and 0.4 kg of BHC are discharged into the environment per tonne of BHC produced.

The amount of waste water produced during the production of carbamates is about 30m^3 per tonne of the product. The waste water is highly toxic and contains carbamates and other organic substances. The lime sludge produced on treatment of waste waters is generally disposed of as land fill. Adequate protection against leaching of carbamates is required to prevent pollution. The same is the case with organo-phosphorus pesticides manufacture.

Some pesticide factories collect concentrated and toxic semi-solid and solid sludges in containers and bury them in pits within factory premises. This is likely to result in ground water pollution.

Dyes and pigments

About 18,500 tonnes of dye stuffs were produced during 1975. Their quantity would increase to 46,306 tonnes by 1988-89. As many as 139 organic chemicals, heavy metals and their salts (Zn, Pb, Cr, Cu, Hg, Mo, Bo) acids and alkalies are used in the manufacture, and most of them get released in small quantities into waste waters, filter cakes and sludges resulting from settling as well as neutralisation of the waste waters. Some of the organic compounds and intermediates are known to be highly toxic, and incidence of bladder cancer, particularly from aromatic amines, among workers has been reported.

Nitrogenous fertilizer

A large number of factories employ the vetrocoke process for the separation of carbon dioxide from the synthesis gas from naphtha. In spite of the closed loop process, spillages occur, and a factory making 1000 tonnes of urea discharges nearly 40 kg of arsenic oxide as complex potassium ferric arsenite. The spillages are collected in specially constructed pans and solar evaporated. The sludge obtained is reported to contain about 12 per cent w/w arsenic, for which a safe disposal method is yet to be established.

Chromates, along with zinc and phosphates, are used as corrosion inhibitors in cooling waters. In a year, the hexavalent chromium discharged through cooling waters from urea manufacture alone will be nearly seven tonnes. The current practice is to dispose of the sludge, resulting from waste water treatment, by land fill; and this is likely to end up in ground water pollution.

Basic organic chemicals

A variety of semi-solid and tarry residues, known as backends, are produced from the distillation columns. The backends from an aniline plant contain phenyl cyclohexylamine, which is highly toxic. Nitrotoluene plant backends mostly contain dinitrotoluene and para-nitrotoluene. These waters, along with huge quantities of the calcium sulphate sludge generated during lime neutralization of acid waste waters, are generally carted out and disposed of on fallow land. Iron sludges and sulphite sludges, which are also disposed of in the same fashion, leach out sulphite into surface waters, causing depletion of dissolved oxygen.

Acrylonitrile

A plant manufacturing acrylonitrile, using propylene, ammonia and air, also produces acetonitrile and hydrogen cyanide. Two waste water stream are generated. The waste water stream containing high concentration of HCN and appreciable amounts of aceto and acrylonitriles are being disposed of by incineration. This practice is likely to result in air pollution if improper incinerators are employed.

Steel

On an average, 1.1 tonnes of coke is used per tonne of steel. In the manufacture of coke, ammoniacal liquor is generated and taken through tar-catch pits for separating heavy tar. This material, due to the presence of phenolic and tar acids in it, is toxic and flammable. The current method of disposal is through land application. Based on the total steel production during 1979-80, the tar slurry generated amounted to about one million tonnes. Other toxic waste waters include those from intensive coolers of the benzol plant and the naphthalene plant. Waste pickling liquor from steel plants, if not disposed of properly, also contributes to the pollution of water bodies. Since the alkaline sludges from a steel plant contain highly toxic chemicals, disposal methods need careful consideration.

Engineering goods

Various oils and producer gas are used in the manufacture of taper rollers and ball bearings. Liquid wastes containing cutting oil, soluble oil, quenching oil, turpentine oil and hydraulic oil are discharged from these plants. The waste water from a producer gas plant is taken through tar-catch pits and settled tar is disposed of on land. The liquid waste, even after the removal of tar, is highly toxic and cannot be detoxified by biological treatment.

The metallurgical industry

Lead metallurgy produces 1.5 tonnes of slag per tonne of refined lead, and the lead lost in slag amounts to 1.45 t/100 t of the refined lead produced. The slag is dumped on land with no metal recovery. Similarly, the slag obtained from the smelting of copper contains Zn, Mn, Cu and sulphur.

Caustic chlorine

Caustic chlorine plants using mercury cells discharge mercury in waste water and sludges. Part of the mercury consumed in the process is lost into air and water.

In summary, it should be noted that information is not available about the toxic waste discharges from several other industries, either due to proprietory restrictions or inadequate monitoring and enforcement. The existing Air and Water Pollution Control Acts do not have specific provisions to deal with the collection, treatment and disposal of toxic and hazardous wastes. Legislative action and necessary control measures and treatment techniques should be adopted. An effective screening mechanism should be established at the national level to limit import of industrial processes known to generate hazardous wastes.

The problem of toxic and hazardous wastes is currently limited to predominantly chemical industry regions. The regulatory mechanism does not provide for early warning systems. Unregulated release of substances, as now prevalent, could lead to disasters. India is in an advantageous position, in that she can learn from the mistakes of industrialised countries and provide for suitable institutional, regulatory and control mechanism to forewarn and prevent disasters from chemicals being dumped into the environment.

☐ —DEPTH News India

Nation-wide enforcement of minimal effluent standards

THE DEPARTMENT OF ENVIRONMENT has made intensive surveys of polluting industries for assessing their pollution potential and abatement measures. A nation-wide programme for enforcement of Minimal National Effluent Standards (MINAS) in respect of selected industries like sugar, distilleries, oil refineries, man-made fibres, integrated iron and steel plants was started during the year towards water pollution control. In addition, guidelines have been formulated for introducing sewage regulations in class-I cities.

Monitoring of air quality in the capital was continued with added facilities and a comprehensive emission inventory in and around Agra-Mathura region was completed. Standards for ambient air quality were also laid down.

Detailed investigations were conducted in the areas proposed for designation as Biosphere Reserves, which included Nanda Devi National Park in U.P., Namdapha Wildlife Sanctuary in Arunachal Pradesh and Neora Valley in West Bengal. Special studies were made in respect of endangered and rare species like Indian Wild Ass, the great Indian Bustard and Desert Cat in the arid zones and Phayre's leaf monkeys found only in Tripura.

For the Convention on International Trade in Endangered Species of Flora and Fauna (CITES), a 10-year review on flora has been prepared. A new scheme was launched by the Botanical Survey of India in collaboration with the universities for intensive studies on fluoristic resources in 100 selected districts. Surveys of medicinal plants resulted in collection of about 250 specimen.

To create a strong research base and training support, the Department of Environment is setting up 'Centres of Excellence'. One such centre for Ecological Research and Training has been set up at the Indian Institute of Science, Bangalore for studying the problems of Western Ghats.

Under the Environmental and Ecological Research Programme, 37 new projects were approved during 1982-83. These include three major projects, namely All India Coordinated Project on Heavy Metals; Multidisciplinary Project on Microbial Degradation of Industrial Wastes; and the Project on Studies of Environmental aspects relating to the Beas-Sutlej link. ☐

Tourism in India

Tourism in India is much more than a mere money spinner. The author says that it is not only the economic compulsion to earn foreign exchange, but a sense of social obligation that makes for a sound tourism policy. Clearly, he points out the need to create a set of economical tourism facilities to cater to the requirement of ever expanding domestic tourists in addition to the facilities being provided to the foreign tourists.

K.K. Srivastava

INDIA ABOUNDS in tourism potential in all spheres, be it historical and cultural, be it hills and forests and other places of scenic beauty, be it wild life, be it hot springs or be it fairs, festivals and people. But its vast potential has not so far been fully exploited. Ours is a vast country, rich and diverse in the beauties of nature; rich and varied in its cultural traditions, yet presenting an enchanting blend and a synthesis of diverse trends—the product of a long history and an unbroken cultural tradition. Our centuries-old existence is reflected in our monuments, our art and architecture, our music and dance, our fairs and festivals and the contributions India has made to man's knowledge and understanding of things around him. Thus, on the national scale, we have vast potential which has still to be fully tapped.

To a large number of people across the world, India is a land of their dreams—exotic mysterious, full of colour, pomp and pageantry. That is the traditional image of India. The new image that is emerging, and that we must endeavour to build up is that of the modern India—the most populous democracy in the world engaged in the valiant task of reconstruction and development. Mere image building, however, is not enough to bring more tourists to India, no matter how beautiful the tourist attractions may be.

Tourism, as we know it, is a post-World War II phenomena and is now a major item of international trade, perhaps the biggest international business activity after Oil. The world tourist traffic during 1981 was 290 million and they spent 106 billion US $ (Rs. 84,800 crores) during the travel process. With this vast traffic, tourism, which is a multi-dimensional activity, presents a tremendous challenge as also unlimited opportunities to countries such as India with a developing economy. This challenge involves:

(a) the creation of the tourist infra-structure which includes such constituents as Hotels, Airlines, Railways, Road Transport facilities.

(b) services such as restaurants, cafetaria, entertainment, shopping; and

(c) service agencies like tour operators, tourist guides and a pool of well trained people to man the entire tourist industry.

Potential

India's tourism potential is virtually unlimited. It is true that between 1951—81 the compound growth rate of tourist arrivals in India was 14 per cent as against the world average of 8.2 per cent, and India's share of world tourist traffic went up five-fold, but it is still a meagre 0.29 per cent. In absolute terms India's foreign tourism went up from a 4.32 lakhs in 1961 to 1.28 million in 1981, inclusive of all tourists in the South Asia Region. I have mentioned the figures for 1961 and 1981, because comparable figures are available for this period. We have thus opportunity to tap a much bigger share of the World Tourist traffic. The Sixth Plan target is to raise the figure to 1.7 million by 1985. The perspective target for 1990 is 3.5 million. Based on the trends indicated by the statistics of the World Tourism Organisation, it has been estimated that India may have 8—10 million tourists (on a conservative basis) by 2000 A.D., which may even go up to 15 million if facilities are adequately developed and markets appropriately tapped. This is a difficult but challenging task.

This challenge is worth considering so far as planned development is concerned. Tourism has many aspects both in economic and social terms. When the country embarked upon the task of creating a tourism plant, the overriding consideration that influenced the policy formulation was the country's need for foreign exchange. This economic compulsion more than any other consideration, decided the Governments' policy of accepting tourism as an economic activity as a means to earn the much needed foreign exchange. The Government was, of course, not insensitive to the demands of domestic tourism, but the focus of attention at that time was, and rightly so, international tourism, i.e., the inflow of foreign tourists and foreign exchange. India's foreign exchange receipts from tourism are estimated on the basis of per capita average expenditure of tourists arriving from different countries as obtained from surveys conducted from time to time. There has been an uninterrupted growth in the foreign exchange receipts since the year 1951. During the period 1951—81, India achieved a compound growth rate of 16.2 per cent in foreign exchange earning as against the world average of 13.5 per cent. In absolute terms, India's receipts have increased from Rs. 77 million in 1951 to about Rs. 7000 million in 1981. This may be a conservative estimate because the RBI's latest estimate (for 1979-80) is over 9000 million.

Importance

It is true that tourism is a major source of foreign exchange earnings. It can help correct adverse trade balances and regional imbalances. It has the advantage of being a painless mechanism for transfer of resources from the high-income developed countries to the low-income developing countries. It is a very important source of maximising scarce foreign exchange earnings not only for developing countries but even for many developed countries. But tourism is much more than this. In economic terms, Tourism is both a labour-intensive and capital-intensive industry. It has thus a vast potential for employment, direct and indirect, has a very good multiplier effect and gives a direct stimulus to socio-economic development of various parts of the country. And tourism is still something more. India now recognises, as most countries of the world do, that tourism is not to be viewed merely as an economic activity. It is also a medium of cultural exchange among peoples of different countries. The large scale travel of people throughout the world draws them closer through experiencing and appreciating one another's culture and life-style. It promotes exchange of ideas and views and thus helps to foster international understanding. In the national context too, here is a growing realisation that tourism is a very effective means of social education fostering goodwill and understanding among the people of this vast and diverse land and thus is a great unifying force strengthening national integration.

Facilities

At the dawn of independence 35 years ago, our country, although richly endowed with beauties—both natural and man-made, was ill-equipped and ill-prepared to cater to the needs of tourists. Facilities such as hotels, transportation and the like were few and far, because travel was a luxury which not many could afford. During the last three decades the tourism industry in our country has made considerable stride as most of its vital segments have grown substantially to meet the expanding demand.

The accommodation sector has made impressive progress and today our hotel industry has attained professional efficiency and excellence comparable to the best in the world. In fact Indian expertise in hotel industry is eagerly sought in many countries. The number of approved hotels in the country has gone up from 186 in 1963 to 371 (approved and functioning) in 1982, the room capacity going up from 7085 to 23,620 during this period (as on 1-10-1982). There are a large number of new hotel projects in several parts of the country at various stages of completion which will add about 14,000 rooms to the existing capacity. Similarly, Air India and Indian Airlines, our national carriers, have made tremendous stride. The total number of passengers carried on Air India went up from 4.87 lakhs in 1970-71 to 14.18 lakhs in 1980-81 registering a growth of 19.1 per cent per annum during this period. Likewise the number of passengers carried by Indian Airlines shot up from 21.60 lakhs to 54.08 lakhs during this period registering an annual growth of 15 per cent. The Railways, which carries about 5 million passengers daily (excluding city counters) has also expanded facilities for international tourism. India has also one of the largest network of roads connecting all major cities with towns and places of tourist interests. The total road length is over 1.15 million KMs and is expanding rapidly under the various plan programmes.

The tourism network in India also includes a large number of travel agents and tour operators and the tourist guides. At the moment these have been mainly concerned with international tourism, so far as the approved sector is concerned. There is, however, a large segment in the unapproved sector which basically caters to the needs of domestic tourism.

With all this infrastructure facilities, we are still far short of our requirements. Even today, it is common knowledge that the demand on our infrastructural facilities is greater than the supply of these services. The shortage is bound to be felt more acutely in the coming years unless there is planned development of these facilities on an accelerated basis.

Domestic Tourism

Apart from international tourism, I have already mentioned about the importance of domestic tourism both in economic and socio-cultural terms, and how it is a great unifying force. It is imperative that domestic tourism, which forms the bulk of the world tourism in almost every part of the world, should receive the attention it deserves.

It is widely believed that a country cannot promote international tourism unless its domestic tourism has attained a high level of development. Many Western countries adopted this approach successfully in the post-War era. This approach, although sound, may not be as easily applicable to developing countries such as ours. However, in the Sixth Plan (1980—85) the Central Government has laid much more emphasis on domestic tourism than in the past. With this end in view and with a view to diversifying and dispersing of the tourism activity without at the same time, spreading the resources rather thinly thereby diluting the impact of tourism, the Central Government in consultation with the State Governments and the Union Territories identified 61 travel circuits with 441 tourist centres for intensive and integrated development during the current decade by pooling all available resources in the country, the Central resources, the State resources and the resources of the private sector. Under this concept, facilities are to be developed at tourist centres and places en route falling along the identified travel circuits. The idea is that the tourist traffic would, by and large, be channelised along these routes or a combination of these routes or part thereof. These are in addition to the existing national travel circuits which continue to be developed further to cope with the increasing tourist traffic, both international and domestic.

Apart from the vastness of our great land and the urges to exploit the tourist potentials in all parts of the country, India faces another complexity in the matter of infrastructural development and service facilities. While domestic and international tourism merge into each other more easily in highly developed countries, in developing countries like India, they remain largely separate entities. There are obvious reasons for this. International tourists coming from industrialised societies enjoy a much higher standard of living, have a different life-style and have much higher incomes. Their requirements are different from those of domestic tourists. Hence developing countries are compelled to provide two sets of facilities, one for visitors coming from high per capita income countries with more or less equivalent standard of living and the other for our own domestic tourists. The nature of tourist product is, therefore, very complex. Even among the foreign tourists, there is no uniformity of demand on facilities and services. There are affluent or not so affluent foreign tourists just as there are affluent and non-affluent domestic toruists. It is, therefore, essential that the requirements of the domestic and non-affluent foreign tourists are carefully incorporated in the development plans.

Role of public and private sectors

Hundreds of thousands travel throughout this great country of ours each day. There are the 'traditional' domestic tourists going to a religious shrine on pilgrimage to attend a Yatra, a Mela, an Urs etc. Their motivation is, of course, religious and no 'promotional effort' is required to generate this traffic. However, there is a lot that can and should be done for the comfort of this large traffic. The public and private sector can play very important roles in this sphere, specially the private sector, voluntary organisations, citizens groups and the travel trade. Then, there are domestic tourists who travel for other reasons—for seeing monuments and historical places, for travel and adventure, for trekking and seeing mountains and places of scenic beauty, for visiting sea resorts etc. Their number is growing rapidly and is at present, estimated at 50 to 60 million per annum. This is evidently the result of our economic growth. The benefits of our economic development during the last three decades have filtered down to millions of our people in urban as well as rural areas. This has produced a class of middle income educated Indians. They are well informed and are eager to learn more and see more of their country and they travel by rail, by road and such of them as can afford it, by air. Knowledge, culture and the longing for an enriching experience are the motivating factors for this class of domestic tourists. Being fairly sophisticated they demand decent accommodation at moderate cost. They require the basic 'modern' amenities but cannot afford deluxe or first class hotels. The same is true of other tourist services. Under the circumstances, our perception of tourism, which to us was merely an economic activity, must clearly change. Tourism, while still remaining a significant part of our economic activity today, is much more than a mere money-spinner. It is not only the economic compulsion—to earn foreign exchange, but a sense of social obligation that makes for a sound tourism policy. Clearly there is need to create a set of tourist facilities to cater to this class of domestic tourists.

Challenging Task

As already explained, India has made substantial progress in developing and promoting tourism since Independence particularly in the field of international tourism. However, we have a long way to go before we achieve our target, namely our due share of the huge international tourist traffic. This coupled with the increased emphasis on providing facilities for the domestic tourists is a challenging task and it is necessary for the public sector and the private sector to pool all available resources and ensure their optimum utilisation. Tourism is an important economic activity earning very substantial and much needed foreign exchange for the country besides providing considerable employment opportunities and accelerating regional development. In addition, tourism is a dynamic factor of social progress and a great vehicle of knowledge and ideas, fostering goodwill among peoples around the world, and within the country.

National Programmes on health intensified

WITH A VIEW to attaining the national goal of 'Health for All by the year 2000 A.D.', the Ministry of Health and Family Welfare has evolved the National Health Policy. With the motto, "The needs of the many should prevail over those of the few", the Policy lays stress on the preventive, promotive, public health and rehabilitative aspects of health care. It aims at establishing comprehensive primary health services upto the remotest areas with peoples' participation. This has been stated in the Annual Report of the Ministry for the year 1982-83.

Malaria, leprosy, T.B. and blindness continued to be the major diseases which needed priority attention. Other diseases which affect the weaker sections of the population most are diarrhoeal diseases, filaria, goitre and Japanese Encephalitis. Intensified efforts are being made to combat those diseases.

Nine selected institutions are being developed as Regional Cancer Research Centres with Central assistance. An agreement has been signed with the Government of Japan for a project for manufacture of vaccine for the treatment of Japanese Encephalitis. For combating diarrhoeal diseases health workers are being taught to adapt oral rehydration thereapy.

In the light of the report of the Medical Education Review Committee a 'National Medical and Health Education Policy' is being evolved. The ministry of Health and Family Welfare is taking steps to improve the quality of education, promotion of research programmes and standardise medicines under the Indian systems of medicine.

Potable water for better child health

In the developing world women and children are the worst sufferers. Millions of women and children walk for several kilometres every day in search of a basic necessity of life—water. And the water they bring home—a few bucketfuls only—is often source of more troubles as this water is contaminated. Efforts are being made to improve the situation. U.N. has declared 80's (1981-90) *as Water Supply Decade to focus the attention on this problem. Government intends to supply drinking water to the entire population by March* 1991.

G. Ravindran Nair

THE POOR illiterate mother does not know when exactly he was born; he may look around five or six, with his bloated tummy looking too big for his rickety legs. The lustreless, sunken eyes glare into the void. Victim of diarrhoea, he cannot assimilate the food he takes in; his bowels move four to ten times daily. As the poor child grows weaker day after day, he becomes all the more malnourished, losing all resistance to disease. Who is the villian of this tragic drama that reduces millions of children in the developing countries to mere bags of skin and bone? Impure drinking water !

In many villages in India the source of drinking water still remains the ponds where people as well as cattle bathe, and where clothes are washed or the rivers or streams which are not only places for public bathing and washing, but are also fed by open latrines that empty into them. There are water holes with impurities from the surrounding areas seeping into them.

Impure water, source of diseases

Water-related diseases are the leading killers of infants and children. An estimated five million infants die in different parts of the world year after year because of intestinal diseases. Most of these children do not live up to see their first birthday. One of the symptoms common to most water-borne and water-washed diseases is diarrhoea. In infants, diarrhoea is not only a symptom of disease, but often a direct cause of death. In fact, according to WHO, diarrhoeal diseases are the most common cause of infant deaths in the developing world. According to official figures in our country it is estimated that about 8.7 per cent of deaths in the first year of life, 19.1 per cent of deaths in the 1—4 age group and 15.2 per cent of deaths in the 5—15 group are due to diarrhoea.

Even when diarrhoea does not prove fatal, its effects are frequently severe and last longer. It prevents the nutritive value of food from being utilised by the body; it also weakens a child to such an extent that he or she becomes more vulnerable to other diseases. Diarrhoea is further aggravated by the traditional practice, common in many countries, of trying to cure it by putting a child on a starvation diet, cutting down on water intake and giving strong purges. The severe malnutrition and dehydration which result from this treatment are among the greatest killers of young children, especially under drought conditions. [UNICEF has recently succeeded in helping to develop an inexpensive oral rehydration formula called "Oralyte" to deal with this serious problem. One packet, mixed with one litre (approximately four cups) of water and given over a 24-period, can restore life to a child on the verge of death]. Infants less than two years old, who are particularly susceptible to diarrhoea, become infected from parasites, bacteria and viruses, not only as a result of drinking unsafe water themselves but also by mothers who do not practise good personal hygiene.

About 163 million children (0—14 years) in rural India do not have access to safe drinking water, and are thus exposed to infection which can prove fatal. In 113,000 villages, the drinking water supply is either more than 1.6 km away, or is substandard, and is responsible for disease like cholera and guinea worm, or problems related to water with two high mineral content. In another 214,000 villages, the water supply from wells, streams, tanks and ponds is inadequate-in quantity, but is open to the risk of pollution. There are at least 185,000 villages where the supply of water is both inadequate and unprotected.

Efforts to improve the situation

As a member of the United Nations, India is committed to the goal of the UN Water Supply Decade and will strive to provide to the maximum number of people of the country safe water and hygienic waste disposal facilities during the period beginning from 1981 and ending in 1990. In a statement made in Parliament by the Union Deputy Minister for Works and Housing on 29th March, 1982 it was made clear that the entire population of the country would be provided drinking water supply by March 1991. As drinking water and sanitation are State subjects, steps have been taken to bring to the notice of the States and the Union Territories the need to take effective measures to comply with the UN resolution.

The targets recommended for the decade are total coverage of the rural and urban population in respect of water supply, 100 per cent coverage of the population of Class I cities in respect of urban sewerage and sanitation, and 50% of the population in Class II and other towns. The overall coverage in each State would be 80 per cent of the urban population by means of sewerage or simple sanitary methods of disposal. In respect of rural sanitation 25 per cent of the rural population would be covered with sanitary toilets. The financial resources needed for achieving these targets is estimated at Rs. 15,000 crore based on 1980 prices.

The Sixth Plan outlay is more than Rs. 3,900 crore compared to Rs. 1,030 crore allocated in the Fifth Five Year Plan to the water supply and sanitation sector. By the end of the Sixth Plan efforts would be made to cover all the identified problem villages by providing each village with at least one source of drinking water.

Potable water changes life pattern

No longer isolated phenomena, both water and sanitation have a total bearing on the overall socio-economic development of children apart from the crucial relationship between water and health. The technologies to produce safe water and for adequate sanitation are not so much of a problem. The important problem is to select the appropriate technologies.

Large communities need much water, often available only from river and lakes. In such cases costly treatment plants are an absolute necessity. For many smaller, rural settlements, it is less expensive to utilise ground water, already filtered by nature. This is tapped through dug or drilled wells. In mountain and hill areas, springs can be protected and their water led by gravity flow through simple piped system to the consumers. For environmental sanitation, systems for excreta disposal can range from large sewerage systems with treatment plants for cities to simple pit latrines. Increasingly, human excreta are used for composting and production of fertilizer. This is done on a large scale. in China and Vietnam. In Vietnam more than 600,000 tons of odourless and harmless fertilizer are thus annually produced in simple inexpensive composting latrines.

At the international level several bodies of the UN like the WHO, UNICEF, UNDP and FAO are very much involved in the provision of basic drinking water and sanitation in different parts of the world. The United Nations Water Conference held in Mar del Plata, Argentina, in 1977, did much to begin actions all over the world, aiming at providing safe water and sanitation for everybody by the year 1990. This lofty goal may be difficult to achieve in a world in which the major problem is that of overpopulation and unequal distribution of resources.

The estimated requirements for increases in annual investments to attain the Mar del Plata targets by 1990 according to WHO, are as follows :

Step-up in annual investment :

Urban water supply :	1.2 times
Urban sewage/excreta disposal:	2.1 times
Rural water supply:	2.9 times
Rural excreta disposal:	4.0 times

All this may easily convey the impression that the question of potable water supply and sanitation is a matter exclusively and solidly in the hands of governments and large organisations. Yet the most important work has to be done among and by the water consumers themselves : building pump platforms, clearing land, digging ditches, laying pipes and draining waterlogged areas around water points and their settlements.

Voluntary organisations have to play a big role in supplementing the efforts of the government and international organisations by galvanising people's participation in the provision of basic water supply and sanitation facilities. For the worst sufferers in water crises all over the world are women and children. It is a matter of daily shame that millions of women and children have to walk several kilometres everyday in search of such a basic necessity of life as water. And these millions of poor women and children do not know that the little water they fetch from long distances so laboriously is pure or contaminated enough to bring fatal ailments in its train.

Along with the provision of drinking water facilities and sanitation infrastructure near home, educating people on the connection between unsafe water on the one hand and disease and death is a must. The villagers must be taught personal hygiene, environmental sanitation and the correct maintenance of pipes and pumps, latrines and wells. As people become better educated and learn the value of working together for the benefit of all, successful water supply projects evolve into sound community development pojects.

Construction of centrally-located wells in villages can be put to better use : attending literacy classes, the liberation of both women and children from the drudgery of spending almost half the day for drawing water for basic household needs The hours of women can be put to better use : attending literacy classes, learning a trade or vocation and looking after the children. And the poor kids can attend schools instead of the trekking all day for water.

Improvement of nutrition is another benefit that results from water projects. When pipes or wells are installed, school and household gradens can be irrigated and children enjoy a more balanced diet. Water projects are in important component of applied nutrition programme which provide nutrition education, training in the cultivation of fruits and vegetables, small animal husbandry, installation and maintenance of chicken hatchery and fisheries to augment family income and also increase the amount of protein children's diets.

Provision of safe drinking water in every village and every city would not only improve the health of children, but would ensure a better and healthy socio-economic future and a far superior quality of life for millions of people in the rural and urban areas in India.

> "This world is the only planet on which, as far as we know, human life can exist. It is thus imperative that we protect and improve, as far as we can, our physical environment. Man is not the master of nature but an integrated part of an extremely intricate and sensitive biosphere. Our action for children and youth must be determined by proper consideration and respect for the environment, so that we do not do anything to worsen an already precarious situation. Water is an extremely precious part of our natural environment, and anything we can do to protect it from pollution we should and must do.
>
> This would be true even if the health and happiness of more than 500 million children were not involved. But, in fact, today, more than 500 million children are endangered because of unavailability of clean water." ☐

How appropriate is appropriate technology

Appropriateness of a technology is based on a pragmatic approach with the objective of greater technological self-reliance and enhancement of domestic skills and talent, together with the provision of basic socio-economic needs of the masses. The author says, such "technology can only be defined in relation to and in terms of economic, social and environmental needs. Every choice of technology needs to be made on the content of its merits."

Rajiv Girotra

WITH INCREASING diversification of and in various areas of science and technology and its slow yet steady 'seeping' into almost all spheres of human activity, a new world was coined in the 1960s--the Appropriate Technology—and was the modest recipient of instant publicity here, there and everywhere.

But unifortunately this concept was taken at its mere face value as the galvaniser of all our ills without giving even a cursory glance to the actual meaning and definition of this otherwise august word. And making a fast buck out of our ignorance about Appropriate Technology the vested interests in other countries started advocating appropriate technology purely as a way of keeping their clutches strong and sound around all advanced technology. Through calculated manoeuvres they tried, and to some extent succeeded too, to establish wrong notions about appropriate technology—a revolutionary concept in itself originating in response to the 'developmental fiascos of the 1960s' in most of the third world, which left, as its brute legacy, useless and obsolete machinery, feudal and subjugating in character, littered across the virgin stretches of Asia, Africa and Latin America.

A new theory is quite often put forward that countries like India who "fall over themselves to import and instal gigantic steelworks, refineries, or auto-assembly plants are, in fact, trying to industrialise from top down, rather like building a stone steeple on a wooden church". This in effect, in all its principles, philosophies and practical pretexts, is like saying, 'you build the windmills while we build the nuclear power plants.' The developed world, out of its self-exercise in self profit, has made small necessarily the most appropriate by saying that small is not only beautiful—it is a trick, a magic wand. And in support of this argument they cite the Chinese example. But those senseless appropriate technology advocates seem to be unaware and ignorant or at least act to be so, of the fact that China's small industry base is not there because they built a "stone steeple on a wooden church", but it, almost entirely, draws its nourishment from a large heavy industry base established out of large and low cost 'high technology' imports from the Soviet Union in 1950s.

The present confusion in our meaning (although created by outside forces) and distortion of our definition of appropriate technology has serious projections and dangerous repurcussions into the future of science and technology—and so industry and agriculture—of our country. This calls for a pragmatic overview and reassessment of the appropriate technology concept.

Whither Appropriate Technology

Appropriate technology is essentially a "technology that contributes the most to the economic and social objectives of development"—a technology mix directed towards maximising social welfare and in direct consonance with the development goals, resource endowments and conditions of application in each country. The development goals essentially envisage something better than the present, in whatever sector 'development' is contemplated to be achieved through planning effort. They necessarily encompass growth of employment and production through optimum utilisation of the local resources, promotion of self-reliance and creative skills and improvement of the quality of life in all its varied aspects and dimensions. As regards resource endowements, it could include in it the considerations like the availability, skill and cost of local manpowers, the level of local management and administrative expertise : amount, access and cost of raw materials, energy and other ancillaries like water.

The conditions of application include in their purview the basic of working, living and social environment of the place concerned, size and demand of the market, variables of the market, level of existing infrastructure and possibilities of development, other industries in the field, and traditions, culture, literacy and social structure of the population that this appropriate technology seeks to serve.

There is so much flexibility and dynamism inherent in the very definition of appropriate technology responsive to the varying conditions and changing requirements in different countries and in different areas of the same country that no generally designed pattern of technology or a specific group of technologies can be categorised as appropriate technology out of a broad spectrum of technologies. Only a pragmatic approach with the objective of greater technological self-reliance and enhancement of domestic skills and talent, together with the provision of basic socio-economic needs of the impoverished masses, mostly concentrated in our vastly scattered rural areas.

To meet the needs of our country with its high population and non-availability of land, there is a desperate need for a technology which creates jobs.

Once this technology is applied, our already established infrastructure can provide technology for improving these jobs. Small technology with village as its base, is thus highly appropriate for India. It will provide more rural jobs and stem the migration of rural men and women to urban areas in search for jobs. It can be controlled and manged by local manpower rather than by alien technicians from multinational companies or pseudo specialists from the cadre of "national elites."

Hand in hand small technology is often too dirty, dull, as well as potentially dangerous and more often than not, it provides jobs that people would opt for only if they have nothing else to do. The financial return is also relatively quite low. Therefore, the small technologies creating jobs must be followed by technologies improving jobs.

But this does not mean that all appropriate technology for India need necessarily be traditional, cottage and village technology with small scale production. India is so vast a country that it is a world in itself, and there will be lots of activities where the circumstances would make the capital intensive technologies involving large scale production as the most appropriate.

In fact, bullock ploughing—most often promoted as the appropriate technology for India—needs a capital intensive industry as its production base. It won't make any sense if the blacksmiths are asked to produce bullock ploughs. First of all their number is (and will be) too small to meet the expected requirements and more over the cost, labour and time involved will be too prohibitive to make any such venture a productive one. Only a capital intensive automated factory to make bullock plaughs would suit the needs.

A large variety of manufacturing and engineering items have a 'small industry' stamp on them only because our entire small scale industry is based on inputs from a highly advanced heavy industry sector with the most sophisticated technologies being applied. Our present set up of heavy industries viz., iron and steel, petrochemicals, electonics, engineering and so on would lead our small scale industries —which are undoubtedly the most appropriate— throughout into 1990s, but immediately beyond that another strong input of high technology would be required for our so well nourished appropriate technology to move on.

Indentifying appropriate technology

Therefore, we have seen that although it can be said without any doubt or ambiguity that the appropriate technology which our country needs, has to be small or 'intermediate'—one that uses labour instead of capital, creates and promotes increased employment and output, is decentralized without losing efficiency and is in kinship with the indigenous skills and resources, we must not lose track of the fact that technology cannot be grown, developed and nurtured in vacuum nor is appropriate technology a route to increased industrialisation. Appropriate technology can be anywhere near productive only when it comes or is brought after some industrialisation has already taken place. Appropriate technology is no substitute to other 'high' or 'low' technologies, but has to be essentially an adjunct to them. "Small is beautiful only when there is something bigger underneath to support it." it needs to be realised that the appropriateness of a technology can only be defined in relation to and in terms of economic, social and environmental needs and necessities. Each and every choice of technology needs to be made on the content of its merits rather on its brute force. It would be an exercise in futility if we try to device a set of appropriate technologies on mere theoretical considerations, although some basic common approach concerning the appropriatenss of sets of available resources and of condition of implementation is possible and advisable.

Determination and selection of appropriate technology would, therefore, entail a proper utilisation and application of both high cost, large scale technologies and labour intensive small scale technologies in precise consonance and synchronisation with the desired objectives in a given set of circumstances. Only then the indusrialised world would not dare ask us 'to concentrate on self-reliance and upgrading traditional technologies, while we (the developed countries) concentrate on advanced technologies and sell you the equipment you need'. □

Steady increase in cashewnut production

THE PRODUCTION OF CASHEWNUT in the country has been steadily increasing during the last few years. The estimated production of cashewnut in 1981-82 was 1.95 lakh tonnes as against 1.85 lakh tonnes in the preceding year 1980-81. The total production in 1979-80 was 1.80 lakh tonnes.

Kerala continues to be number one producing State accounting for about 60 per cent of the total production. The other important producing States are Andhra Pradesh, Karnataka, Tamil Nadu, Maharashtra, Goa and Orissa (in order).

Cashewnut is small hoarders' crop with over 70 per cent of the holdings being small and marginal. A Centrally Sponsored Scheme on Package Programme for development of cashewnut is in operation with the objective of increasing, the area and production under cashew. This scheme envisages an expenditure of Rs.5.44 crores in the cashew growing States during the Sixth Plan.

A Multi-State Project with an investment of Rs. 38.36 crores with World Bank assistance is also in operation in the States of Kerala, Karnataka, Andhra Pradesh and Orissa for increasing the production of cashewnuts.

India is one of the leading cashew growing and exporting countries of the world. Cashew kernals worth over Rs. 140 crores were exported in 1980-81. The exports during 1981-82 were worth over Rs. 168 crores. During April-September 1982, cashew kernals worth Rs. 80 crores were exported. □

Consumer protection under the M R T P Act

Although the MRTP Act provides for the protection of consumer interest from monopolistic and restrictive trade practices of manufacturers and distributors and from concentration of economic power in a few hands, the implementation of these provisions leaves much to be desired. Consumers have also failed to exercise their right of protection under the Act by bringing to the notice of the MRTP Commission the cases of restrictive trade practices indulged in by unscrupulous businessmen.

Dr. D.P.S. Verma

THE MONOPOLIES AND RESTRICTIVE Trade Practices Act, 1969 (the MRTP Act) is a major instrument of consumer protection in India. Brought in force on June 1, 1970, the MRTP Act is intended to provide that the operation of the economic system does not result in the concentration of economic power to the common detriment, for the control of monopolies, for the prohibition of monopolistic and restrictive trade practices, and for matters connected therewith or incidental thereto. The Monopolies and Restrictive Trade Practices Commission (the MRTP Commission), a quasi-judicial body, was set up by the Central Government in August, 1970, for purposes of the MRTP Act. The MRTP Commission consists of a Chairman, who should be at least of the rank of a Judge of a High Court, and not less than two members and not more than 8 members, who should have knowledge of, or experience in, the fields of economics, law, commerce, accountancy, industry, public affairs, or administration. The MRTP Commission enjoys the powers of a Civil Court for certain purposes.

The consumer interest is sought to be protected under the MRTP Act by way of the control of monopolistic and restrictive trade practices and by prevention of concentration of economic power when it is harmful to the consumer and the public.

Control of monopolistic trade practices

Monopolistic trade practices are essentially those trade practices with represent abuse of market power in the production|distribution of any goods and supply of any services. As defined under the MRTP Act, a monopolistic trade practice means "a trade practice which has, or is likely to have, the effect of—

(i) maintaining prices at an unreasonable level by limiting, reducing or otherwise controlling the production, supply or distribution of goods of any description or the supply of any services or in any other manner,

(ii) unreasonably preventing or lessening competition in the production, supply or distribution of any goods or in the supply of any services,

(iii) limiting technical development or capital investment to the common detriment or allowing the quality of any goods produced, supplied or distributed, or any service rendered, in India to deteriorate."

The concept of trade practice used under the MRTP Act is very wide. It includes any practice and even a single or isolated action of any person in relation to any trade, industry, profession, or occupation relating to the production, supply, distribution, or control of goods and the provision of Services.

The MRTP Commission is empowered to inquire into any monopolistic trade practice either upon a reference made to it by the Central Government or upon its own knowledge or information. If, as a result of such inquiry, the Commission makes a finding to the effect that, having regard to the economic conditions prevailing in the country and to all other matters which appear to be relevant in the particular circumstances, the trade practice operates, or is likely to operate, against the public interest, the Central Government may pass such orders as it may think fit to remedy or prevent any mischiefs which result, or may result, from such trade practice. Such an order may provide, *inter alia*, for regulation of production, supply, distribution or control of any goods or services, and the terms of sale, prohibiting the party concerned from resorting to such an act or practice or from pursuing any commercial policy which prevents or restricts competition.

Thus, the power of passing final order in respect of any monopolistic trade practice lies with the Central Government and the MRTP Commission's role is relegated to that of a fact-finding expert body.

A monopolistic trade practice is deemed to be prejudicial to public interest if, in the particular circumstances of the case, the trade practice is likely to unreasonably increase the cost of production or distribution of goods or the provision of supply, or their prices or the profits earned. Moreover, the practice is also considered against the public interest if it unreasonably limits competition in respect of the goods or services or if it leads to the product shortage or to the deterioration in the quality of any goods or in the performance of any service.

The provisions relating to the prohibition of monopolistic trade practices have not been rigorously enforced. During the period of nearly 13 years the

MRTP Act has been in force now, only four cases of monopolistic trade practices were initiated. None of these cases has been finalised so far. Three of the four monopolistic trade practice inquiries were instituted on references received from the Central Government against Coca Cola Export Corporation in July, 1973, and Colgate-Palmolive (India) Ltd., and Cadbury-Fry (India) Ltd., both in March, 1974, leading manufacturers of soft drinks, toothpaste and other consumer goods, and chocolates and beverages, respectively. The major allegation against these companies is that they were earning unreasonably high profits by increasing prices of their products without any relevance to the cost of production, thereby harming the consumer interest.

All the three references were challenged by the respondent-companies in writ petitions filed before the Delhi High Court which stayed the proceedings before the MRTP Commission. The petitions were dismissed in December, 1979. The companies however, preferred appeals before the Supreme Court. The appeals are pending.

In the fourth monopolistic trade practice inquiry instituted by the Commission *suo motu* in June, 1975, against Avery India Ltd., leading manufacturer of weighing machines, the Commission interim order was challenged by the company in appeal before the Supreme Court in 1977. The appeal is pending.

Due to an ineptly drafted legislation and interference by the High Courts and the Supreme Court, none of the four monopolistic trade practice inquiries could be finalised so far. Thus, the implementation of the consumer protection measures relating to the statutory control of monopolistic trade practices in India has been negligible.

Control of restrictive trade practices

As provided under the MRTP Act, a restrictive trade practice means "a trade practice which has, or may have, the effect of preventing, distorting or restricting competition in any manner, and, in particular—

(i) which tends to obstruct the flow of capital or resources into the stream of production, or

(ii) which tends to bring about manipulation of prices, or conditions of delivery or to affect the flow of supplies in the market relating to goods or services in such manner as to impose on the consumers unjustified costs or restrictions."

Trade practices which are generally considered to be restrictive trade practices include : tie-up Sales and full-line forcing, exclusive dealing, collective price fixing, collusive tendering, price discrimination, resale price maintenance, territorial restriction, restricting and withholding of output or supply, collective boycott and exclusion from trade association membership, and predatory pricing.

The MRTP Commission is empowered to inquire into any restrictive trade practice on the basis of (i) a complaint from 25 or more consumers or from a trade or consumers' association, or (ii) a reference from the Central Government or a State Government, or (iii) an application of the Registrar of Restrictive Trade Agreements (the RRTA—an officer appointed by the Central Government under the MRTP Act), or (iv) on its own knowledge or information.

A restrictive trade practice is deemed to be prejudicial to the public interest, unless the Commission is satisfied of one or more of the eight circumstances specified under Section 38 of the MRTP Act (commonly known as "public interest gateways"). After an inquiry, if the Commission is of the opinion that the practice is prejudicial to the public interest, it may direct (a) that the practice shall be discontinued or shall not be repeated (referred to as a "cease-and-desist" order), (b) the agreement relating thereto shall be void in respect of such restrictive trade practice or shall stand modified in such a manner as may be specified in the order. The Commission is also empowered to permit any party, on its application, to take such steps within the specified time as to ensure that the practice is no longer prejudicial to the public interest. In case the Commission is satisfied that the necessary steps have been taken within the specified time, it may decide not to pass any order in respect of that practice. However, the Commission is not empowered to pass any order in respect of (a) any agreement between buyers relating to goods which are bought by the buyers for consumption and not for ultimate resale, whether in the same or different form, type or specie, or as a constituent of some other goods, (b) a trade practice which is expressly authorised by any law for the time being in force. Moreover, public sector undertakings are exempt from the provisions of the MRTP Act.

Before arriving at a conclusion that the trade practice in question amounts to a restrictive trade practice, the Commission has to inquire into the actual and probable effects of the practice on competition in the relevant trade. The effect on competition is of crucial importance in the scheme of the regulation of restrictive trade practices.

In exercise of its powers to regulate restrictive trade practices, the Commission, during the period, from August 6, 1970 to December 31, 1981, instituted 376 inquiries into restrictive trade practices of various undertakings. The Commission passed final orders in 320 of these inquiries during the said period. 143 inquiries (38.04%) have been initiated by the Commission on the basis of the applications of the RRTA and 216 (57.45%) inquiries on the basis of its own knowledge or information.

Though the MRTP Act was intended to serve as a tool of consumer protection, it seems to have received little response of cooperation from the consumers too. It is evident from the negligible number of inquiries instituted by the Commission into restrictive trade practices on the basis of complaints received from consumers or their associations. Out of the 376 inquiries, only 15 inquiries (3.98%) were instituted on the basis of complaints made by trade or consumers associations having membership of 25 or more members. Barring two cases of industrial buyers' associations, the complainant-associations represented only the dealers' interest. Not even a single inquiry originated from any complaint either by 25 or more consumers or by any association of consumers having a membership of 25 or more persons.

The lack of interest on the part of consumers and their organisations indicates that the consumer movement in India is still in its embryonic stage. A large number of consumer organisations have sprung up in the country during the last few years, such as the Consumer Council of India, New Delhi, the Consumer Guidance Society of India, Bombay, the Fair Trade Practices Association, Bombay, the Council for Fair Business Practices, Bombay, the Indian Federation of Consumer Organisation, Bombay, and the Consumers Education and Research Centre, Ahmedabad. However, none of these organisations seems to have taken pains to bring to the notice of the MRTP Commission various restrictive trade practices prevailing in the consumers goods market. The Consumer Education and Research Centre, Ahmedabad, in September, 1980, made a complaint against Hindustan Motors Ltd., which was referred for a preliminary investigation to the Director of Investigation (an officer appointed by the Central Government under the MRTP Act for making preliminary investigations at the instance of the MRTP Commission). Since no inquiry has been instituted by the Commission against the company till December 31, 1982, it seems that no *prima facie* case has been made out against it. Thus, the consumers have made hardly any use of the statutory provisions to safeguard their interest against restrictive trade practices in the supply of goods or the provision of services.

Moreover, during the twelve years of the working of the MRTP Act, only two (i.e. 0.53% of the total) restrictive trade practice inquiries were instituted by the Commission on two references from the Central Government. One of these two inquiries was disposed of in September, 1982. No reference at all was received from any of the State Governments. Thus, the Central and State Governments have made hardly any use of the provisions for consumer protection provided under the MRTP Act, by making references of the suspected cases of restrictive trade practices. The primary reason appears to be the lack of awareness of the legal provisions, particularly the procedural aspects of making a formal reference to the Commission on the part of the Government. The lack of initiative on the part of the Government to protect the consumer is another reason.

As a measure of consumer protection, the practice of maintenance of minimum resale prices is absolutely prohibited under Section 39 of the MRTP Act and the contravention of these provisions is an offence punishable with imprisonment, or with fine, or with both. However, no punitive action has been taken so far against any manufacturer or distributor indulging in this prohibited trade practice. A number of cases came before the MRTP Commission where the party concerned was maintaining minimum resale prices but the Commission treated these cases as cases of ordi[illegible]strictive trade practices and either passed a [illegible] order or dropped the inquiry on the basis of an undertaking by the party concerned to give up the practice. This is mainly because the powers of imposing penalty and fine are vested in a court of law and not in the Commission itself. So far no proceedings have ever been filed before a competent criminal court in respect of violation of the provisions relating to prohibition of minimum resale price maintenance. It is anomalous that although the Commission in a quasi-judicial authority headed by a person of the rank of a Judge of a High Court, it does not enjoy powers to award punishment to parties violating statutory provisions, but it is required to file a complaint before a criminal court of the Magistrate of First Class.

Control of concentration of economic power

The object of the control of economic power is sought to be achieved through examination of proposals of large and dominant undertakings for substantial expansion establishment of new undertakings; merger, amalgamation and takeover; and also by way of division of such undertakings when their functioning is likely to be against public interest. While deciding these matters, the Central Government and the MRTP Commission have to follow the guidelines provided under Section 28 of the MRTP Act.

Although the direct impact of the provisions relating to the prevention of economic power is on the structure of industries, the degree of market power possessed by undertakings has the effect of transferring of resources from less to more efficient uses. The encouragement of cost reducing innovation, reduction of margin between costs and prices, reasonable profit rates and the stimulus to improvement in product and quality services and the introduction of new product are the end products of such a policy. While deciding the above proposals, the consumer interest is of primary importance and approval to a particular proposal is granted by the Central Government only when it is satisfied that such an approval is in the interest of the consumer.

In matters relating to the prevention of economic power, the role of the Commission is limited. It can only submit its findings to the Central Government when a particular proposal is referred to it for inquiry and report for passing necessary orders under the scheme of the Act. Thus, the power of passing final orders in these matters rest with the Central Government.

The number of references relating to substantial expansion, setting up of new undertakings, and merger amalgation and takeover has been declining year after year. More than 90% of cases have been decided by the Central Government without making references to the MRTP Commission. The Commission, being a quasi-judicial body, should enjoy more powers in matters relating to the concentration of economic power. All matters relating to the prevention of concentration of economic power should invariably be referred to the Commission for inquiry and report. This will result in protecting the consumer interest more effectively.

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U.S. food aid to India, a realistic view

If India is to achieve self-reliance on the food front external aid should not be allowed to frustrate the domestic producers' initiative to produce more food to cope with the domestic demands. Also infrastructural facilities in agriculture should be improved, extended and strengthened.

Dr. B. M. Jain

THE FOOD AID HAS often been recognized as a key variable in the economic development of India. It is true that the food aid stayed as a temporary factor in solving immediate food problem faced by India. But if we view it within a broad realistic framework, we find that it has served precisely the "opposite purpose". Instead of encouraging domestic production, it increased India's dependence on the US "surplus" food provided under various PL-480 programmes. Often the Indian government defended the US food assistance in terms of its role in bringing down food grain prices, arresting inflationary trends and help boosting developmental activities in various sectors. Perhaps, it has failed to realize that in the long run, such programmes hit hard the local food production. This article seeks to argue that the US food aid programme, in its finality, ran counter to India's economic sovereignty, autonomy and its much publicized concept of self-reliance.

The concept of food aid originated in the US thinking to dispose of the surplus food both as a pragmatic necessity and the moral obligation to save millions of people from hunger and malnutrition especially those of the South Asian Subcontinent. Food aid programmes, writes David W. McClintock, represented the 'policy objective somewhere between pure humanitarianism and pure pragmatism.'

Motivated by a sense of "altruism" and "enlightened" political self-interests, the US policy makers decided to launch upon food-exporting drive.

Evolution

The US food aid to India is an integral component of its foreign economic policy. At the time of independence, India was faced with unprecedented economic difficulties and was on the brink of massive food catastrophe. For food deficit was a great barrier to its integrated economic development. More often, floods and famine adversely affected India's agriculture sector and thus causing millions of people to undergo the traumas of hunger, destitution and diseases. Under these circumstances, the Indian government was left with no other alternative than to depend on outside food assistance. Prime Minister Jawaharlal Nehru during his visit to the US in October 1949 stressed the urgent need of the American food aid to avert food disaster at home. But unfortunately due to anti-India bureaucratic lobby at Washington, the shipment of emergency food was delayed for quite some time. Nevertheless, New Delhi started receiving shipments of wheat soon after President Truman signed the India Emergency Food Assistance Act in 1951. This had at least given a sense of relief to the "worried Indians".

American food aid programmes became more manifest when PL-480 was enacted under the Agriculture Trade Development Assistance Act of 1954. Initially, it evoked positive response from aid recipient nations. This was perhaps due to their domestic compulsions and critical foreign exchange position. It is also true that the newly independent nations were in the processes of nation-building and required much of external aid to improve their economy. Now in India's case, we find that it concluded the PL-480 agreement with the US government on August 29, 1956 when it was facing a serious foreign exchange crisis. Under Title I of PL-480, India received agricultural commodities on concessional terms and under the Title II, it procured food commodities on a grant basis. This kind of assistance totalled $ 76 million in 1972-73.

We may add here that America had its own "historical stakes" in these programmes. It wanted to see India's nascent democracy survive against the Communist challenge that was predominant at that time. This, however, did not mean that US food aid that channelled into India, was due to its democratic stakes alone. The US had its vital strategic and economic interests too. So far as US domestic reasons were concerned, it had vast "farmers" constituency which, in the perceptions of American leaders, exercised a sizable political influence on the domestic politics. In brief, domestic as well as external compulsions induced the US decision makers to employ the food aid as a convenient and efficacious weapon.

As we had earlier hinted that the "surplus disposal philosophy" was the dominant current of the US economic policy towards the developing countries in the late forties and early fifties. But the term "surplus" gave an impression to the developing nations that the US was far more serious about removing the extra burden of its own surplus food grains rather than in their economic "welfarism". So they felt that the American government was not doing any special favour to them. Thus their negative images of the US had lowered its prestige in the Third World. But with the entrance of Kennedy in the White House in 1961, the Administration tried to reorient the food aid programme for the poor, developing world. President Kennedy's foremost task was to replace the surplus disposal outlook by 'food for peace' (officially the title was changed through 1966 amendment of PL-808). He had fairly a good understanding of the psychology of Third World leaders who identified the US "surplus food aid" with the neo-economic imperialism. Hence, President Kennedy stressed that if aid programmes were to succeed, Americans must not seek to undermine the "self-respect" of the proud peoples of the developing nations. He spoke of US new commitments in the economic development of India and the non-aligned countries which though often were treated with scepticism by the previous administrations.

The Food for Peace programme under the Presidency of Lyndon B. Johnson lacked sophistication in his approach. His interest in the economic problems of the Third World considerably diminished after President Kennedy's death. He took the problems of developing nations rather in a casual manner, perhaps, owing to the US deep military involvement in Vietnam. And partly because President Johnson felt that American interests should be given greater weightage than those of less developing nations. He acknowledged that the US was the "prime beneficiary" of these programmes.

As obvious from the statement of the President that the food aid programme that was initially regarded as a "temporary means" to dispose of "burdensome" agricultural surplus under the guise of promoting economic development of aid recipient nations, became an effective means to "support U.S. foreign policy."

US Food Aid Involvement in India

India has been one of the major recipients of the US food aid under the Democratic as well as the Republican Administrations. There was no major shift in the US food aid policy towards India during the Republican Administration whenever it got opportunity to dominate the White House politics. It may, however, be added that the Republican governments often employed dilatory tactics in releasing the funds. Otherwise, the basic trends remained unchanged. When we come to compute the food aid assistance, we find that from the period 1951—1977, India received 4,719.1 millions of dollars under Title I and II of PL-480. Out of this amount, 4,076.8 million dollars were repayable by India in rupees and the remainder was repayable in the dollar currency. The US proposed $ 90,000 for India for the financial year 1979 in view of the general 'world food|populations problem.' The Agency for International Development (A.I.D.) especially emphasized the need of such programmes for 'development as well as humanitarian concern for India's poor.'

The US government spelt out the justification behind massive A.I.D. programme for India. Two important reasons suggested were : (i) the restoration of democratic institutions in India after the emergency and; (ii) India's vast problems of poverty, population, "food shortages" and unemployment. It said : 'Democratic elections in March 1977 brought restoration of full political liberties in India, and the new government has expressed desires for improved relations with the United States...... A.I.D. and PL-480 programmes in FYs 1978 and 1979 will support the new government's policies to increase agricultural production and rural employment.'

Though it is understandable that US recognized India's capacity to produce 'record harvests', it pointed out to the fact that India failed to keep food production in proportion to the population growth. But as a matter of fact, the US has not been forthcoming in food grants to India. India received a loan of $ 30,000 for food and nutrition in the financial year 1978 but there was no grant for the year. Similarly for the financial year 1979, the proposed obligation was much higher than the previous one so far the loan for food and nutrition was concerned. The proposed loan was $ 38,000 and no grant was given. Thus we find that in the years 1972—76, the US government provided over $ 1,000 million under PL-480 Title I and Title II assistance that included food aid for maternal and child health care, schooling feeding and food for work. The $ 30 million loan provided through bilateral accord was concluded between India and the US in New Delhi on August 26, 1978 for irrigational purposes in Gujarat. The US commitments for the Fiscal Year 1980 under PL-480 food Aid Title II, were in the form of gift commodities through American voluntary agencies. It amounted to $ 149.7 millions. Gift commodities through world food programme were worth $ 12.6 millions and through cooperative league of the US were worth $ 31.9 million. In all, these totalled upto $297.4 millions.

A Changed Scenario : Lessons for India

We have often been arguing that US has been very liberal and sympathetic towards India's food problems and her developmental programmes. It has also been noticed that a large scale American aid has channelled into India for the purposes of averting food disaster, hunger, malnutrition and for the eradication of poverty, diseases etc. But during the past few years, the perceptions and attitude of the American government have undergone qualitative changes. It is difficult to single out reasons in order of preference. However, we may say on the basis of policy behaviour that attitudinal changes are of far greater importance for India and the Third World countries. The change in the US style, strategy and approach may perhaps be traced out to its own domestic compulsions—decline in the surplus stock and deteriorating situation in agricultural production. As a result, Americans have laid down stringent conditions in regard to food aid programmes. For instance, repayment in dollars rather than in local currencies is being stressed upon by the US government. Such a slant in the US policy would frustrate the very rationale behind the original idea of providing food aid to the developing countries. In fact, these programmes were mainly intended to improve the foreign exchange position of the aid recipient nations which could not afford to buy food commodities against the dollar payment. Due to the tightening up of food aid terms, the recipient countries seem to be less inclined to accept the American food, except in exceptional circumstances.

Food aid strategists argue that instead of 'growth-promoting effects' of the programme, it dampened incentives for producers in India. Due to the disincentive effects of the external food aid, Indian farmers have lost much interest in producing adequate foodgrain to cope with the critical food situation at home. Local traders have also sought to exploit the farmers' dissatisfaction.

Demographic Scene

There is a deepening hiatus between the rising population and the food production in India. Although there is a general upward trend in the population scenario throughout the world, it cannot justify India's rising population. On the other hand, Indian planners should seriously take Jacob Rosin's warning that if the growing rate of the world population were not brought under control, a "chemistic human society" would emerge in the near future. In Rosin's views, the man would "one day" subsist on a diet 'totally independent of the process of assimilation.' Keeping Rosin's warning in view, India should take meaningful and urgent steps to curb the population explosion. Its plan strategists must also be aware that India's deflecting resources might pose a serious challenge to her agricultural and industrial infrastructure if the population variable continued to dominate the national scene.

Initiatives

In order to stem the contingency of food crisis, India requires to control population growth at a much faster speed and also needs to transform the tradition based agriculture into the modern one. So far as population controlling measures are concerned, they have not been very encouraging. In fact, they can be successful in a country like China where national programming is compulsorily implemented without ignoring the fact of the conscious backing of the people themselves. The latest statistics of the U.N. suggest that India's population is 'surging ahead at 2.5 per cent a year, whereas China has managed to curb its growth rate to 1.4 per cent.' In a recently held seminar at the Oxford University, experts were of the opinion that if no "intensified efforts" were made to control the population explosion throughout the world, the entire social order would reach the "breaking point." In such circumstances, both the Indian people and the government have a onerous moral obligations to create appropriate conditions to boost family planning measures. At the same time, a well-integrated government machinery is required to combine the dissemination of knowledge about the family planning with offering of incentives to the people on a highly elaborative pattern.

Besides the family planning measures as one of the effective means to decrease India's dependence on the US food and other agencies, the Indian government should set itself to the task of increasing agricultural production to tide over the crisis at the moment. This requires, as stressed earlier, a complete agricultural mechanization, a complete transformation in tradition-oriented agriculture especially in the rural areas. The urban farmers have undoubtedly been applying modern agricultural inputs to raise the agriculture production, but rural farmers both out of ignorance and denial of access to modern scientific means of farming have far lagged behind in the race. For instance, agricultural inputs like tractors, fertilizers, insecticides, pesticides etc. are not within their reach. Rising costs of these items have further dealt a serious blow to the ambitions of rural farmers.

As regards the Indian government's agricultural credit policy, it expressed its inability to liberalise the policy to accommodate more loan seekers. Quite recently, all the opposition members of Parliament strongly pleaded for a large flow of credit to agriculture. But the Union Finance Minister Pranab Mukherjee spelt out that there was no scope for "liberalising credits." Though the Minister conceded that due to severe drought conditions, the agricultural production might fall by about six million tonnes during the current year. If the Indian government is reluctant, perhaps for financial reasons, to come to the rescue of abysmally poor agriculture producers, there does not seem a moral justification to condemn and criticize the foreign aid givers for their stringent terms on the food assistance. This should not be interpreted as acquiescing in their policies. It is merely intended to press the point that building of agricultural infrastructure should not be neglected at any cost inspite of financial compulsions.

Current trends indicate that India may face acute shortages in food items like edible oil, milk products, meat and dry-fruits. Negative factors like poor harvest, worsening famine conditions and lack of incentives to farmers may further accentuate the critical situation on the food front. As we find that crop losses in the states of Assam, West Bengal and Orissa due to fickle monsoon have been estimated at more than Rs. 1,100 crores this year. In northern States of Rajasthan, Haryana, Jammu and Kashmir, the situation has become still worse. Due to the failure of the monsoon, the food output in several items has declined. The output ranging between 132 and 134 million tonnes during the past few years is alarmingly much lower than what was envisaged in the Sixth plan target. It, therefore, needs intensive concentration on agriculture. Unseasonal rains in April—May 1982, damaged the wheat already procured and preserved by the government. So, India will have to import 2.26 million tonnes of wheat from America which has already agreed to make early shipment of wheat. From our preceding discussion, we may conclude that within the parameters of economic development, India will have to chalk out strategies both in conceptual and operational sense if it has to do away with its dependence on the US food that, we have stressed, has proved a negative factor in the overall economic growth of India.

Suggestions

If India is keen on achieving self-reliance on the food front, some broad suggestions may be listed as follows:

1. External food aid should not be allowed to frustrate the domestic producers' initiatives to produce more food to cope with the domestic demands.
2. Efficacious measures should be taken to curb the population explosion without undermining the necessity of increasing the growth rate of the foodgrain output.

(continued on page 25)

Reorganising educational system for better standard of living

A Nation's productivity and overall prosperity are a collective effort of individual citizens. Their skill, sincerity, hard labour and foresight can only help in achieving the national goals and objectives.

Prof. P.K. Jena

FROM THE DAWN of civilization, man has been ceaselessly working for producing food, energy and a variety of things from resources available around him to meet his multifarious necessities. He is making constant endeavours towards improving his standard of living and deriving more and more comfort for a better life. At the outset, he used his muscle power and brain in this process but in due course with acquisition of more and more knowledge and experience, he started supplementing his physical capabilities with those of other animals. In due course he became wiser and his analytical mind started functioning efficiently to harness the wealth of nature. To-day, man has excelled in his objective to replace the limited physical power by those of efficient and powerful machines. With the advancement of knowledge in various fields and the advent of modern computers, man has been highly successful to get more of the routine and complicated work done by machines in very short time. However, his brain power, extraordinary imagination and managerial telents are behind these achievements. In the modern times these have been criteria for allround development and industrial advancement of a nation. With the key of modern science and technology in hand, man to-day has been able to unlock the hidden treasures of the nature and utilise them to produce his growing needs and create various facilities for better living and comfort. However, these are countries having negligible natural resources but talented manpower, which have been able to achieve very high standard of living. These scientifically advanced countries are able to develop improved processes and better finished goods with less cost using imported raw materials and selling them to other countries after meeting their own requirements.

Collective efforts

A Nation's productivity and overall prosperity are a collective effort of individual citizens. Their skill, sincerity, hard labour and foresight can only help in achieving the national goals and objectives. Fortunately today most of the countries in the world are independent and are at liberty to use their own resources, talents and the gifts of science and technology in bringing up their socio-economic standards. However, it is a general experience that people of the developed countries are more productive and hence there is an upward trend in their Gross National Product. As a result of this, the government agricultural and industrial organizations could afford to give various incentives from time to time to the people making steady improvement in their standard of living. The high standard of living, in turn, is enabling their society to undertake and implement various welfare programme for the people including rendering various assistance to the old and invalids. The citizens on their part become more sincere, honest and hardworking in discharging their duties and maintain discipline and develop better civic sense in day to day life in such a society. Behind such a progressive and organised society, if we keenly analyse a well-knitted educational system is pervading. Generally in a developed country, there is a continuous improvement in educational system starting from college level. At every stage, the experts and planners of education keep in mind the fundamental objective of education how much a citizen is going to contribute in the production stream of the Nation and prepare himself as a true citizen. In such an educational system more stress is given on learning science and technology and their application to meet the needs of the changing society. Most of the developing and underdeveloped countries of the world on the other hand operate on a very unsatisfactory system of education. In most of the cases the educational system is obsolete. The students coming out of school and colleges in such socities learn very little out of the education. It is not an exaggeration that they come out with frustration, because the type of education they receive, does neither give them enough skill and confidence to stand on their own feet nor enable them to share the responsibilities and duties in the society. As a result of this many of them earn their livelihood by all sorts of odd and indecent means without being really productive. As a consequence, such a person instead of being an asset to the society, often proves himself a burden. It is a sad plight that the percentage of such citizens because of defective education is going up day by day. Various mischievous tactics, wrong political affiliations, high handedness and criminal actions come to his rescue in leading a so called better living. It has a tremendous demoralising effect on other citizens who are law abiding, honest, disciplined, sincere and hardworking.

Gloomy picture

No doubt, the developing nations have registered a steady rise in their literacy, but the education both at school and college level presents more or less a gloomy picture today. Besides steady decline in standard of education, the examination to test the knowledge, calibre and capabilities of the student has also become a mockery. The sole objective of most of the students is to get a certificate or degree and then by hook or crook to enter into a job failing which to earn the livelihood by some means. Further, either due to poverty and unfavourable situations in the society or lack of opportunities, many potentially talented children do not get proper facilities for better and higher education in order to enable them to make tangible contributions towards ultimate national productivity.

In most of the developing countries, manpower planning is not very satisfactory. As a result of this, lopsided development takes place. A large number of qualified persons in some areas remain unemployed and frustrated, whereas in other discipline dearth of trained personel is felt. It is a fact that in many developing countries, a mushroom growth of schools and colleges has taken place without proper infrastructural facilities and trained teachers. This trend in education instead of helping the society has been doing a great harm by producing greater number of unproductive citizens. Such unqualified and unsuitable personalities when occupy various positions in Government, Industrial and Educational Institutions, create an inefficient and dishonest atmosphere resulting in decrease in standard in all levels of productivity. Under these circumstances, with an unfavourable system of education, even though the nature's bounty is abundant, it is next to impossible for a country to progress and produce any tangible results towards upgrading the socio-economic standards of the people.

Gurukulashram

In order to establish a healthy and developed society, the first and foremost step is to completely overhaul the present educational system. Education is judged from what a student learns in school minus what he forgets after he leaves the school. History testimonies that many of the developing countries of today were highly developed once in the past. In a country like India, in ancient times, every citizen was trained in the *Gurukulashram* and used to learn about different aspects of life till he was fit and the *Guru* was satisfied enough that the *Sishya* could stand on his own feet and able to contribute his share to the society. That is what is needed today. The philosophy of the old system of education should be revised with appropriate changes and methodology. For example, the schools should have necessary infrastructure with highly trained and ideal teachers. Teaching must be objective and vocational in nature so that the child from the very beginning learns not only routine humanities, but also how to be a good citizen, and makes best use of modern science and technology to improve the standard of living and protect the environment. He must also be conscious of social problems including race and caste barriers, superstitions, family planning etc. and his role as a citizen to iradicate these. In the primary and high school levels, emphasis on education and practical training should be given on modern methods of cultivation and dairy production, and also preservation of crops and other agricultural produce. He should also be taught on the post-harvest technology including processing of agricultural and animal products in addition to other vocational trainings in the area of carpentry, blacksmithy, weaving, tailoring, soap and detergents making, etc., if necessary in industrial units. In this process the educational institutions may be partly self-supporting by selling the products made by the students. Sufficient emphasis from the very beginning should be given on learning and application of mathematics and science. Of course due emphasis on learning languages, history, civics and geography should be given so that this capabilities of expression become an asset in his day to day life. In this process the child prepares himself not only to earn his living but also prepares himself to contribute to the society in a right way. Further from the very beginning he would learn how to be more useful and productive and make his life happy.

Higher education

After school education, if a student desires for higher studies he should undergo rigorous written and practical test to determine his aptitude for higher education and also the discipline of his interest. Higher education being very expensive, it should be planned and assessed in such a way that those who would be trained in various disciplines could be absorbed properly after completion of their education to meet the necessary requirements of various national projects. Both education and examination system at the present days should be more objective oriented. With purposeful education, there is bound to be higher efficiency and very little room for any decrease in the moral and social standards. In college level education, more emphasis should be given in the area of science and technology and sufficient institutions should be established in these disciplines. Admissions should be purely on basis of merit of the students and demand in the industrial and other technical and managerial fields. There should be enough scope for mobility of personnel particularly at the senior levels between administrative departments, industrial houses, education and research institutions and other important social organisations to give scope for better sharing of talents and experience.

Thus right type of education is bound to increase the productivity and general standard of the nation and moulding and grooming our children to sincere, disciplined and hard working people. Developing countries without any loss of time should get into the task of modernising and reorganising the educational system for achieving higher productivity and better socio-economic standard of living. Noble and talented citizens are our best manpower resource.

Courtesy : All India Radio

Problem of poverty and its alleviation

The schemes in themselves are not important unless the benefits from them percolate and permeate among the rural poor who need to be rehabilitated and uplifted. It is only through the involvement and participation of the masses in the development efforts that the State effort at the national level and constructive work at the grass-roots can be integrated. Rapidly increasing population is our biggest enemy in the race of rapid economic development.

P. K. Bhargava

INDIA HAS now the experience of over three decades of economic planning and as a result of sustained efforts significant achievements have been made in the spheres of agriculture, industry, education, medical and public health services, communications and transport, banking and insurance, etc. It is beyond doubt that living conditions have improved everywhere, even in the most backward areas. However, the fact remains that millions of our people are still victims of abject poverty and they are not getting even the basic necessities of life. Mr. Charan Singh, the former Prime Minister of India, is right when he says that "Poverty of India is extreme : it is, indeed, now regarded as proverbial. Even elementary necessities of life—food, raiment and shelter—are not available to tens of millions of our people to the required degree". The fact is that the problem of poverty is not only acute in our country but its magnitude is also gigantic.

The problem of poverty is not something new in this country as it has existed throughout. The national thinkers and leaders such as Dadabhai Naoroji, Ranade, Mahatma Gandhi and Jawaharlal Nehru did suggest from time to time a strategy to solve the problem of poverty in India. It may be emphasised here that successive five-year Plans laid emphasis on raising the living standards of the masses but it was only in the Fifth Five Year Plan that removal of poverty was acknowledged as one of the principal objectives to be achieved. The Draft Fifth Five Year Plan (1974-79) stated that 'Removal of poverty and attainment of economic self-reliance are the two strategic goals that the country has set for itself." We are in agreement with the observation of the Planning Commission that "The existence of poverty is incompatible with the vision of an advanced, prosperous, democratic, egalitarian and just society implicit in the concept of a socialist pattern of development. In fact, it holds a potential threat to the unity, integrity and independence of the country. Elimination of poverty must, therefore, have the highest priority." The Sixth Five Year Plan (1980—85) also rightly stresses that "the reduction in poverty should receive the highest priority in our development strategy."

No single universal norm

It may be emphasised that there cannot be a single universal norm of poverty. Norms even for the basic needs and minimum requirements are influenced by a variety of factors and thus differ from society to society and vary from time to time. Even without making an empirical survey, it can easily be said that majority of Indian population could be said to be living in poverty if the norms of the west regarding basic needs or minimum requirements are applied to our society. Professor Dantwala observes that "A fifth of the population of the United States, a nation with highest per capita income, were officially described in 1964 as 'living in conditions of poverty'. By the official U.S. standard for 1970, a family of four was poor if its income was less than $ 3944 a year. Judged by the same standard, probably 99 per cent of India's population could be said to be living in poverty." It is therefore necessary that a distinction must be made between absolute and relative poverty. For developed countries, the problem is not that of providing basic necessities of life to their citizens as they are already in a position to enjoy some comforts, if not the luxuries of life. In such societies, the concern of the State is the distribution of income and|or consumption among different groups of people. However, in developing countries like India the concern of the State is to make available to the citizens the basic necessities of life, viz. the food, shelter and clothing. Accordingly, the concept of absolute poverty is more relevant and appropriate for the developing countries. In relative sense, poverty is bound to exist in all societies and all countries and will ever be with us. Hence in the context of a poor country like India, it is the absolute poverty which the scholars have tried to measure.

Consumption-expenditure ratio

In India, consumption-expenditure has rightly been considered more appropriate and relevant for the measurement of poverty. The usual method is to fix a poverty level in terms of an overall *per capita* consumption-expenditure which is needed to ensure a certain minimum calorie-intake. Several estimates regarding poverty in the country have been made from time to time. The Planning Commission has defined poverty line on the basis of the recommended nutritional requirements of 2400 calories per person per day for rural areas and 2100 calories per person per day for urban areas. On this basis, it has been estimated that, at 1979-80 prices Rs. 76 per month in rural areas and Rs. 88 per month in urban areas are required to meet the minimum nutritional standard. Applying this criterion, the National Sample Survey (32nd Round) indicated that the number of people below the poverty line in 1977-78 in rural areas was 251.66 million and in urban areas the number was 51.10 million : the average monthly per capita consumption for people below the poverty line (at 1977-78 prices) in rural and urban areas was Rs. 44.96 and Rs. 53.87, respectively. Thus a considerable proportion of our population lives below the poverty line : the percentage of such people was 48.13 in 1977-78 as against 51.49 in 1972-73. It may, however, be noted that while the percentage of population living below the poverty line has declined marginally, the number of such people in absolute terms increased from 302.76 million in 1977-78 to 316.84 million in 1979-80. Needless to say, a large majority of the poor lives in rural areas : the percentage of population living below the poverty line in rural areas was 50.82 in 1977-78 as against the corresponding percentage of 54.05 in 1972-73. Most of the rural people living below the poverty line belong to the categories of landless labourers, small and marginal farmers, rural artisans and backward classes who have either no assets or if they have some they are plagued by low productivity and consequently low income. These people do not have necessary skills which could enable them to have regular full time jobs. They do not have work for some part of the year and at times they have irregular and seasonal work. In urban areas the poor are to be found mostly in the unorganised sector with irregular employment and they are generally paid low wages.

The Draft Fifth Five Year Plan (1974--79) has stated that "The twin causes of poverty are underdevelopment and inequality. It is inadmissible to ignore or underplay either factor." Accordingly the size of the national income must increase and along with it inequalitities in the distribution of wealth and income must also be reduced since "...inegalitarian structure of society is especially detrimental to progress in India because economic levels are generally pitifully low and the poverty of its masses is debilitating and degrading." Thus, growth and reduction in inequality are both indispensable for alleviating poverty.

Removal of poverty

If every Indian has to be made available with larger basket of goods and services, then it is obvious that the level of national income|production must increase. About five decades ago, professor C. N. Vakil rightly stated that "......if India is to grow richer, or in other words, if the average Indian is to get a larger share for himself from the production of the country, then on the one hand the production itself should be increased, and on the other, it should be so arranged that the total production should be available for distribution within the country itself, that is, among the sons of the soil." It may however, be emphasised that raising the level of national income alone is not enough, its composition and distribution is equally important. Investments which have been made to produce luxury items such as cars and refrigerators add to the value of output| production and push up the index of national income. But such increases in national income do not satisfy the wants|necessities of masses; instead encourage conspicuous consumption by a small section of the society which is relatively better-off. This is undesirable both from social and economic points of view. An optimal allocation of resources is, therefore, of utmost importance. Unortunately, this has not been given due attention by the Indian planners during the process of development and to that extent this neglect constitutes a failure of economic planning in India.

Wide inequalities in the distribution of wealth and income are found both in rural and urban areas. A number of studies are available in this regard. Inequalities in the distribution of wealth and income deprive the 'have nots' from sharing the national prosperity and progress. Accordingly, such measures must be devised as may enable the poor to increase their share in the wealth and income of the nation. One of the measures to bring about a better distribution of wealth would be raising the wage levels, especially of the unorganised sections of the labour force. As they are unorganised, their wages are not commensurate even with their producivity—minimum wages must, therefore, be prescribed. Accumulation of wealth in the hands of a few and conspicuous consumption of the power elite should be rigorously curtailed through various fiscal and other measures.

The problem of poverty is directly related to the existence of unemployment, under-employment and low productivity employment. With the passage of time the backlog of unemployment has increased. At the beginning of the Second Plan, the number of unemployed persons was 5.3 million which was estimated to have increase to 18.7 million in 1971 by the Expert Committee on Unemployment (Bhagwati Committee) that submitted its report in 1973. After 1970-71, the Planning Commission stopped estimating the backlog of unemployment and only the guess estimaes are all that are available. Professor Raj Krishna and Amartya Sen provided estimates for 1971 of 9.25 million unemployed, 12.20 million severely under-employed and 7.84 million moderately under-employed. By this reckoning for the first two categories, the figure has been estimated anywhere between 28 and 35 million by 1976.

Unemployment and poverty

As the problem of unemployment and poverty are interrelated, one cannot be reduced without reducing the incidence of the other. There is, however, nothing like a serious employment policy and manpower planning. There appears to be hardly any scope to absorb the surplus labour force in industry unless the technology employed is radically changed since the past experience of industrialization in India shows that the proportion of rural to urban population has remained almost unchanged with around 80 per cent of the population in the countryside. It is interesting to note that ".... in India fairly rapid growth in the non-agricultural sectors in the last 25 years of planned development has completely failed to make any noticeable impact on the industrial distribution of the work force... employment growth with in these sectors has been insufficient to absorb an increasing proportion of the labour force." It is also reported that within the organised sector as a whole, and the manufacturing sector in particular, the rate of employment absorption in the public sector has been much greater than in the private sectors. So between 1965-66 and 1976-77 in the organised sector, the public sector averaged a 3.65 per cent annual rate of employment compared to a 0.04 per cent increase in the private sector. Under such a situation and with more active participation of the private sector in the industrial expansion of the country, it is likely that the problem of unemployment may worsen in future. Hence, the solution before us is to favour labour-intensive technique for our industries. In addition, more and more wage-goods should be produced. Above all, there should be a proper planning of human resources and requirements.

It may also be emphasised here that no programme regarding removal of poverty can succeed in an economy where prices have a tendency to rise continuously at a rapid rate. The Indian economy has been under the pressure of rising prices continuously since 1956-57 and in recent years the problem has become more acute. Rapidly rising prices have unfavourably altered the distribution of wealth and income in our society and have created fresh inequities. Although, the Fourth Plan laid great stress on growth with stability as one of the main objectives to be achieved but the situation has been the other way round. The inflationary situation is so alarming in the country that it needs to be tackled on a far footing through various monetary, non-monetary and fiscal measures because in the absence of price stability not only the existing disparities will widen but new inequities may also emerge to the detriment of the poor.

Reorientation of agrarian relations

Since the incidence of poverty is relatively more in rural areas, reorientation of agrarian relations is essential so that the ownership of land is shared by a larger number. Various land reform measures have been devised by the Government from time to time but the fact remains that their implementation has been too poor. In consequence, the rural masses have continued to suffer. At a recent Conference organised by the Ministry of Rural Development it has been impressed upon the State Governments to set-up additional courts and appoint special legal advisers for speedy implementation of land reforms. While there is necessity of implementing land reform measures, the urgency of providing various supplementary inputs to the farmers so as to increase the produce on the farm cannot be over emphasised. It would be in the fitness of things that various inputs| facilities are provided to the farmer under one umbrella in the village so that he is really able to increase the produce on his farm. The concerned agency should also assure him a fair price for his marketable surplus.

The Government has devised special programmes for alleviation of poverty in rural areas, in addition to the general measures adopted to increase the levels of employment and income in various sectors like agriculture and allied activities, construction, industries, etc., and has also extended the benefits of various social services (such as education, health and family welfare, housing, water supply and sanitation) to the rural poor.

Among the various special programmes devised by the Government for alleviation of poverty in rural areas Integrated Rural Development Programme (IRDP) and National Rural Employment Programme (NREP) need special mention. The IRD programme was launched in 1978-79 with the primary objective of raising the poorest families in rural areas above the poverty line by giving them income generating assets and access to credit and other inputs. The target group consisting of the poorest among the poor includes small and marginal farmers, agricultural and non-agricultural labourers, rural artisans craftsmen and scheduled tribes and in fact all persons who live below the poverty line. The benefits under this programme are to flow exclusively to this target group.

IRDP

The IRD programme was initially taken up in 2300 blocks in the country but was extended to all the blocks in the country from October 2, 1980 in view of the mass poverty and unemployment in rural areas. From the same date, the Small Farmers Development Agency (SFDA) programme, which was under implementation in selected areas, was merged with IRDP. Similiarly, the special livestock production programme which was in operation in 21 States and 4 Union Territories was also merged with IRDP.

The Sixth Five Year Plan (1980-85) attaches great importance to this programme and it aims at assisting 3000 families per block. With 5000 blocks in the country, the Plan hopes to cover 15 million families| households or 75 million people. The total expenditure under this programme during the Sixth Plan will be Rs. 1500 crores which will be shared between the Centre and the States on a 50 : 50 basis. During the year 1980-81, the Central share of allocation amounted to Rs. 127.8 crores but the actual amount released was only Rs. 19.18 crores. Similarly, the target number of families to be assisted was fixed at 3 million but the actual number of families benefiting under the scheme was 2.14 lakhs. It is also to be noted that the aggregate actual expenditure on IRPD was Rs. 10 crores during the first four months of the financial Year 1980-81 "The shortfall in the utilisation of funds allocated for the programme is reportedly attributed to the slow progress made by State Governments in implementing the Centre's guidelines regarding the programme. It is reported that most of the State Governments have not even set up suitable block level agencies." The programme has thus not made proper headway.

Started in 1977 under the name of the Food for Work Programme, the National Rural Employment Programme aims at generating additional employment in rural areas through utilisation of available stocks of foodgrains and thereby creating durable community assets for strengthening the rural infrastructure which will lead to rapid growth of rural economy and also raise steadily the income levels of the rural poor. Under this programme, allocations to different States| Union Territories are made on the basis of weightage of 75 per cent given to the population of agricultural labourers and marginal farmers and 25 per cent to the incidence of poverty in each State. Wages are paid partly in the form of foodgrains and partly in cash. The programme has become an important agency for rural development. During the three year period (1977-78 to 1979-80), large number of community assets in the rural areas were created which had an impact on the quality of life in the villages all over the country. Additional employment generated during the year 1979-80 was 5336.66 lakh mandays as against the corresponding figure of 3556.97 lakh mandays in 1978-79 and 744.34 lakh mandays in 1977-78. Besides generating additional employment in the rural areas, the programme has manifold benefits. As part of the wages have necessarily to be paid in food grains, the programme has the impact of raising the level of minimum wages and increases the income of the rural poor, improves their nutritional standards, helps to stabilise prices of foodgrains, and provides an instant solution to the problem of destitution and abrupt unemployment. The Sixth Five Year Plan 1980-85) relies greatly on this programme as an instrument for the generation of employment. It is estimated that the NREP will creat employment for 300-400 million mandays of employment every year.

Benefits for the rural poor

Needless to say, the schemes in themselves are not important unless the benefits from them percolate and permeate among the rural poor who need to be rehabilitated and uplifted. It is only through the involvement and participation of the masses in the development efforts that the State effort at the national level and constructive work at the grass-roots can be integrated.

Finally it may be pointed out that rapidly increasing population is our biggest enemy in the race of rapid economic development. Increasing population reduces our gains on all economic fronts and, at times, intensifies the existing problems. Surely, we cannot wage a war against poverty unless the growth of our population is effectively controlled. Between 1971 and 1981, the rate of increase in our population has come down by only 0.05 per cent : the rate of growth was 24.80 per cent between 1961-71 which came down to 24.75 per cent between 1971-81. This decline in the rate of growth of our population is too inadequate in view of the fact that the number of people living below the poverty line has continued to increase with the growing size of our population. By 2000 A.D. our population is likely to be 100 crores and even if we assume that there will be a reduction in the percentage of population living below the poverty line, the number of such people will be much more than what it is today. Hence, control of population must be the concern of the entire country and a policy to encourage small sized families must be adopted. A number of incentives and disincentives must be devised and practised for the purpose because "In the ultimate analysis the success of our efforts in eliminating poverty and unemployment will depend on the extent to which we succeed in reducing the rate of population growth." □

(continued from page 19)

3. Nutrition sector be given a fillip to discourage export produce.
4. Infrastructural facilities in agriculture should be improved, extended and strengthened. Chemical fertilizers should be made available at a cheaper rate especially to the rural farmers.
5. Strategy should be adopted to provide affluent water by sinking more tubewells if natural vagaries were to be averted.
6. Rural farming should be given top priority over the urban one.
7. The public distribution system should be improved if the supply of food grain is to be ensured at all levels in an equitous manner especially to the weaker sections of the Indian society.

Assessment

From the US point of view, the food aid failed as a political resource. Especially after the emergence of Bangladesh, American policy makers saw no strong case for more aid to India because its strategic assessment of the region underwent a qualitative change. From the Indian perspective, the food aid proved useful only as a temporary relief measure, but in the long range policy terms, it failed to build the Indian economy. On the other hand, its disincentive impact on the domestic producers became more apparent ever since India's dependence on the US food increased. At the end, we may sum up that if India is to attain the goal of self-reliance, it will have to combine the efforts of controlling the rising population with the aim of boosting agricultural production through technological application. The Indian government will also have to revise its policies towards the rural farming and its overall credit policy without losing any further time. This may create favourable conditions for disciplining the economy and ensuring a qualitative life to the neglected strata of the society. □

IRDP benefits 22 lakh families of S.C.s and S.T.s

There has been greater coverage for scheduled castes and scheduled tribes under the Integrated Rural Development Programme (IRDP). Over 41.5 per cent of the families belonging to S.C. and S.T. as against the target of 30 per cent have been benefited under the Programme.

PRIORITY IS BEING GIVEN to Scheduled Caste and Scheduled Tribe families under the Integrated Rural Development Programme (IRDP). During 1982-83, IRDP benefited over 41.5 per cent of the Scheduled Castes and Scheduled Tribes families as against the target of 30 per cent. According to the reports available till February 1983 out of 22 lakh beneficiaries, 6.73 lakh were from Scheduled Castes and 2.37 from Scheduled Tribes. The percentage of Scheduled Castes and Scheduled Tribes coverage in the previous year was 35 per cent.

The Centre has released a sum of Rs. 176.17 crores in 1982-83 for the IRDP as against Rs. 128.44 crores in the previous year. It represents an increase of 37 per cent.

According to the reports received from the States the total expenditure under the IRDP upto January 1983 is Rs. 190 crores. Besides, Rs. 380.72 crores have been mobilised as term-credit from financial institutions The total investment thus comes to Rs. 570.8 crores.

There has been a marked increase in both per capita subsidy and per capita credit in 1982-83. While per capita subsidy went upto Rs. 1036 from Rs. 928, the per capita credit increased to Rs. 2076 from Rs. 1713. The total per capita investment has thus gone upto Rs. 3112 as against Rs. 2641 in 1981-82

Implementation of programmes

There has been considerable improvement in the pace of implementation in the programme in the States as compared to last year. Upto December 1982, the expenditure incurred represented a step up of 28.3 per cent as compared to expenditure upto December 1981 in the previous year. Similarly the term-credit mobilised has also gone up by 65.6 per cent.

Impact studies of Integrated Rural Development Programmes have been carried out in some of these States like Tamil Nadu, Rajasthan and Gujarat. The study in eight districts of Tamil Nadu reveals that 40 per cent of the beneficiaries assisted during 1980-81 have crossed the poverty line by August 1982. Similarly 29 per cent of the beneficiaries assisted in 1981-82 have crossed the poverty line by August 1982.

In Gujarat the study indicates that more than 50 per cent of families have improved their income to the extent of Rs. 2000 to Rs. 3000 and 33.17 per cent of the families have increased their income between Rs. 1000 and Rs. 2000. The sample survey of 10 per cent of beneficiaries conducted in Madhya Pradesh has indicated that over 80 per cent of the families have reported increase in their annual income. About 19.6 per cent cases have not been able to come up because of various reasons such as non-completion of projects, non-availability of raw materials and market facilities etc.

In Rajasthan the step up in the overall per capita income of beneficiaries assisted in 1978-79 over a period of three years ranges from 31.5 per cent to 76.8 per cent. In case of families assisted in 1979-80 overall per capita incremental income over two years period varies between 12 and 22 per cent.

Limiting factors

Among the various limiting factors in implementing the scheme is the lack of proper administrative set-up. Out of 17 States, Union Territories for which additional staff have been approved, only three have approached the Central Government for release of funds. Another reason is frequent transfer of key officials like Project Directors and District Magistrates.

The State/Union Territories which are lagging behind on the basis of performance in the first two years of the Plan are Assam, Bihar, West Bengal and the Union Territories. In view of the peculiar problems of basic infrastructure in the North-Eastern Region the Ministry of Rural Development has set-up a Committee to study the programmes and suggest modified pattern for that area.

In terms of percentage of Central share released to the States the performance last year has been better as compared to 1981-82. Only in case of Meghalaya, Nagaland and Pondicherry there was a shortfall. Whereas in 1981-82 four Union Territories were not able to avail of any assistance during the entire year, last year all States/Union Territories availed of the assistance. It is expected that both the financial and physical targets of the last year will be achieved.

IRDP in 20-Point Programme

Integrated Rural Development now forms an important component of the New 20-Point Programme. The programme aims at benefitting 15 million families to increase their income above the poverty line. An outlay of Rs. 1500 crores have been provided for the scheme for the Sixth Plan which will be shared equally between the Centre and the States. Besides Rs. 3000 crores will be provided by the financial institutions as loans leading to investment of Rs. 4500 crores.

(Continued on page 28)

Mid-Term Appraisal of Sixth Plan under way

According to the Annual Report of the Planning Commission for the year 1982-83, the Commission is engaged in working out details of resources and balance of payment projections of the Sixth Plan. The Commission has also launched a scheme aimed at strengthening the district level planning machinery.

THE PLANNING COMMISSION HAS been engaged in the mid-term appraisal of the Sixth Five Year Plan. This included, among others, detailed work relating to resources and balance of payment projections. This has been brought out by the Annual Report of Planning Commission for the year 1982-83.

While the scheme for strengthening of the planning machinery at State level is being continued, another scheme for strengthening the district level planning machinery was launched during the year. Under the scheme the Central Government proposes to reimburse to the State Governments upto half of the total expenditure incurred by them.

The Commission maintained the tempo in according investment approvals to new schemes. The schemes approved during the year included power projects like the Central Super Thermal Stations at Vindhyachal, Rihand and Ramagundam Extension. In the context of future bulk transmission of power for forming a national grid, a steering committee was constituted to recommend hardware and systems studies.

Review of energy sector

A critical review of the coal and lignite sectors performance during the first two years of the Sixth Plan was carried out. Twelve coal projects with a capacity of 17.4 million tonnes were cleared. In addition, expansion of the second lignite mine at Neyveli, raising the annual capacity from 4.5 million tonnes to 10.5 million tonnes was also approved. Special initiative was also taken for drawing up an exploration scheme for evaluation of lignite resources in Rajasthan.

A detailed examination of demand projections for petroleum products was carried out in collaboration with the Department of Petroleum. A number of energy conservation and pollution abatement schemes were examined and cleared. The Commission also examined 30 other major projects and schemes pertaining to oil exploration, handling facilities, refining and marketing.

The Commission carried out a review of estimates of financial requirements and of anticipated achievement of capacity and production targets of major industries in the country. The Commission has initiated follow-up action on the findings of the Study Group on 'Financing of Investment in the Private Corporate Sector in the Sixth Plan'. Working Groups have also been set up to prepare long-term profiles of demand and development programmes upto 2000 A.D. for iron and steel, fertilisers, non-ferrous metals, petroleum and coal. Other studies undertaken included demand for textiles and synthetic fibres upto 1989-90, power availability and necessity of captive power plants for metallurgical projects, the Statewise demand-supply position of alcohol in 1989-90, demand projections for explosives and for major petrochemicals.

Among the important projects in the transport sector assessed or cleared by the Commission were construction of four new railway lines, three gauge cations. As this Programme now forms part of the prehensive schemes for improvement of draughts in the Hooghly estuary, purchase of airbuses and Boeing aircraft for Air India and Indian Airlines, extension of Vayudoot operations, purchase of cargo vessels, tankers and bulk carriers and construction of a bridge on the river Yamuna at Delhi. The Commission also set up a Working Group for the Seventh Five Year Plan for the ports sector to identify, inter alia, major schemes at different ports to be incorporated in the Seventh Plan.

Universalisation of education

The Commission was engaged in the preparation of plans for universalisation of elementary education in pursuance of the directive of the National Committee on Elementary Education. It also examined proposals for foreign technical assistance. These included 74 proposals under UNDP Assistance and 43 under bilateral technical assistance. The Commission reviewed about 900 Science & Technology schemes of 31 Departments spread over 14 socio-economic sectors during the year.

The Planning Commission reviewed the Integrated Child Development Services Scheme in respect of the cost estimates and the personnel requirements of the project and brought about necessary modifications. As this Programme now forms part of the New 20 Point Programme, its scope has been enlarged from 600 envisaged originally to 1000 ICDS projects for the Sixth Plan period. A decision was also taken to implement the scheme of integrated education of the handicapped as a Centrally-sponsored scheme (on 100 per cent Central-support basis) instead of sharing it with the States on the basis of 50 per cent matching contribution. The scope of the scheme "Grant-in-aid to voluntary organisation" in the field of social defence was expanded to cover the voluntary organisations working in other fields of social welfare.

The progress of implementation of schemes and programmes included in the Tribal Sub-Plan and

Scheduled Caste Component Plans was reviewed and targets laid down. Special emphasis has been laid on the development of extremely backward tribal communities termed as "Primitive Tribal Groups". During the year, 19 such groups were idenified, in addition to 52 groups identified till 1981-82.

The report of the National Committee on Development of Backward Areas in respect of tribal areas was examined and comments invited from the concerned Ministries and State Governments.

The identification and freeing of bonded labour gained additional momentum during the year. The scheme of rehabilitation of bonded labourers was integrated with the other ongoing schemes to provide greater benefits to the freed bonded labourers. There was steady progress in setting up of District Manpower Planning and Employment Generation Councils by State Governments during the year.

20-Point Programme

The revised 20-Point Programme announced by the Prime Minister in January 1982 focussed on some of the important socal and economic programmes included in the Sixth Plan, and seeks to impart greater dynamism to these. The revised 20-Point Programme forms an integral part of the Sixth Plan and financial outlays and physical targets under the different items have been derived from the approved Sixth Plan and Annual Plan outlays. A 20-Point Programme cell was set up in the Planning Commission in April 1982 to monitor and evaluate the performance in respect of various items of the programme in different States and Union Territories. Monitoring machinery has been established in all States and UTs and Central Ministries. At the Centre, a high level Cabinet Committee under the chairmanship of the Prime Minister has been set up to review the progress and implementation of the Programme.

The Cell brought out Monthly Progress Report giving achievements of the critical physical targets for the various points: Quarterly Progress Reports giving comprehensive evaluatory reports and recommendations were also brought out.

The causes of imbalance in the finances of a few States were examined and the Ministry of Finance, in consultation with the Planning Commission and Reserve Bank of India, evolved a fresh Overdraft Regulation Scheme which became operative from Ist July, 1982. This was to obviate recourse to accommodation from the Reserve Bank of India as a source of financing the State Plans.

The Planning Commission finalised 121 appraisal notes on new proposals during 1982. These included nine pertaining to fertilisers and chemicals, 20 to petroleum and petro-chemicals, 37 to coal, steel, mines and metals, 10 other industrial projects, 6 power projects, 12 food and agriculture, schemes 18 shipping, transport, tourism and civil aviation proposals 4 regarding communications and 5 other proposals. In addition, the Commission also prepared appraisal notes on 42 revised cost estimates, 5 supplementary notes and one ex-post evaluation.

The high-level Expert Group set up in 1981 to examine the working of the Integrated Rural Development and other Poverty Alleviation Programmes submitted its report in February 1982. The report is being processed with the help of the concerned Central Ministries, States and Union Territories. Under the Land Reforms Programme, the Commission examined amendment to the land laws of Bihar, West Bengal, Haryana and Andhra Pradesh to bring them in line with the national guidelines. A Study Group was also set up to study the drawbacks in the functioning of the Centrally-sponsored schemes relating to 'Financial Assistance to Assignees of Ceiling Surplus Land' and suggest steps for its effective implementation by States.

The Advisory Committee on Irrigation, Flood Control and Multipurpose Projects considered 47 major and medium irrigation, flood control and multi-purpose projects during the year.

The Planning Commission analysed progress of Plan projects and achievement of targets in 20-sub sectors of industries and minerals, energy, transport, irrigation, rural development and education. Quarterly reports for the Cabinet were prepared on production performance and project implementation in selected sectors, namely fertilisers, steel, coal, power and railways. The problem areas along with action points for taking remedial measures were also identified in these reports. Reports on the status of progress of work on 51 Central Sector Projects under construction, each costing Rs. 100 crores or more, were prepared indicating the critical problem areas for initiating corrective action during the year. ☐

(Continued from page 26)

Each year 600 families are to be covered in every block. Of this about 400 beneficiaries are expected to be covered under agriculture and allied sectors and atleast 30 per cent of the total number of families assisted should belong to Scheduled Castes and Scheduled Tribes. However, the coverage of Scheduled Castes and Scheduled Tribes has been higher since 1981-82.

The programme is being implemented at the district level by District Rural Development Agencies which have been set-up in all districts. The agencies are headed by the Deputy Commissioner Collector|Chief Executive Officer of the Zila Parishads. Other members of the Governing Body are MP's and MLA's of the areas, representatives of banks, general managers of DIC, two representatives of weaker sections and one representative of rural women. ☐

Science & Technology Notes

Laser treats stomatch ulcer

SOVIET scientists have started using laser beams to treat gastric ulcers. They also stimulated the biologically active points on human body by using laser technique, which they call laseropuncture.

The specialists scan the stomach with the help of a special instrument—fibrogastroscope. An optical fibre attached to the laser simultaneously conducts its beam to the affected part of the stomach. The process hardly takes more than a second.

Moreover, the beams heal the ulcer very quickly—in two, three or five sessions, depending on the conditions of the ulcer. The laser therapy takes half the time of the earlier method of treatment.

(APN)

New wheat variety for both hot and cold climate

SOVIET scientists have developed a new variety of wheat adapted well to both the hot zones as well as alpine climate. Highly nutritive, its yield per hectare is about eighty quintals.

Over the last few years, Kirghiz plant breeders have handed over to the collective farms nine such valuable varieties and hybrids of headed crops and maize. Plant breeders abroad also show keen interest in the new variety called "Przhevalskaya" developed by the Kirghiz scientists.

The Soviet specialists maintain that the yield of any wheat or rye variety can be increased at least by 40 per cent on the basis of their heredity mechanism.

(APN)

National Leprosy Eradication Commission

A NATIONAL LEPROSY ERADICATION COMMISSION has been constituted for the guidance and surveillance of the Leprosy Eradication Programme under the Chairmanship of the Union Minister of Health and Family Welfare, Shri B. Shankaranand. The National Programme for the Control of Leprosy has also been renamed as the National Leprosy Eradication Programme.

The Government has taken this decision on the recommendations of the Report of the Working Group on the Edadication of Leprosy.

The National Leprosy Eradication Programme will be implemented as a vertical programme in districts with an endemicity of 5 or above per thousand, until the prevalence rate comes down to below 2.5 per thousand.

TV without a picture tube

FIRST steps towards creating a TV set without a picture tube has been made in the Institute of Semiconductors of the Ukrainian Academy of Sciences. Its screen is formed by an exceedingly thin luminescent film, which glows under the action of electric current. The quality of the image is not affected even by direct sunlight. Tension in the film-screen, compared to the traditional picture tube, will drop to one-hundredth. This new screen can be hung even on the wall.

(APN)

Utilisation of fly-ash in building industry

THE National Buildings Organisation (NBO) has devised a number of ways for the use of fly-ash in building industry. It is a waste material from thermal power stations, the disposal of which causes problem of pollution and entails considerable expenditure. About nine million tonnes of fly-ash is produced annually by over 40 thermal power stations in the country.

One of the major avenues of utilisation of fly-ash is the production of cellular concrete which is lightweight and has thermal insulation value. It has the structural properties required for use as building components. Due to light weight and high-strength-to-weight ratio of cellular concrete products, their use results in appreciable economy in the consumption of cement and steel.

Tamilnadu Housing Board is extensively using this product in their residential construction in place of burnt clay bricks for walls as a composite material.

The NBO in collaboration with Punjab State Industrial Development Corporation (PSIDC) has prepared a project proposal for setting up a plant of capacity 500 cum. of cellular concrete flooring and roofing slabs and blocks per day, utilising 300 tonnes of fly-ash from the Bhatinda Thermal Power Station.

Hope for Malaria Sufferers

A DRUG NAMELY, mefloquine, developed by the United States of America holds out hope for the one quarter of mankind at risk from malaria. This drug, discovered by the Walter Reed U. S Army Institute in Washington, is the only new anti-malarial drug that has reached an advanced stage of development and clinical assessment. Another anti-malaria drug, also developed by the U.S.A., is qinghaosu, derived from an ancient Chinese herbal remedy.

Both are effective, but neither is ideal, says the World Health Organisation.

According to WHO, new cures for malaria are urgently needed because of the increasing failure of current methods of combating the disease through chloroquine.

The WHO says, "roughly 40 per cent of humanity, 1,900 million people, is still at risk from malaria today. The disease exists in varying degrees of intensity in 102 countries and poses a continuing problem to health authorities."

A WHO summary explained that great strides have been made over the past decade in the research and development of a vaccine against malaria, adding that this would make a "major contribution to malaria control by protecting susceptible individuals from the disease and by limiting the transmission of the parasite." The development of such vaccines was the subject of a coordinated effort in several countries, the WHO summary noted, and "it is likely that one or more types of malaria vaccine will be tested in humans before long."

Malaria control is part of WHO's strategy to increase primary health care worldwide.

(USIS—Science News).

Additional irrigation potential created

AN ADDITIONAL irrigation potential of about 4.65 million hectares has been created during the first two years of the Sixth Five Year Plan. A target of 2.34 million hectares of potential has been fixed for 1982-83. It is expected that this target will, by and large, be achieved. Thus, an additional irrigation potential of about 7 million hectares would have been created upto 1982-83.

For 1982-83, an outlay of 2350.6 crores has been approved. Of this, Rs. 1581.87 crores is for major and medium irrigation, Rs. 317.59 crores (plus Rs. 295 crores from institutional sources) for minor irrigation and Rs. 156.14 crores for Command Area Development Programme.

Minor Irrigation

According to the Annual Report, of the Ministry of Irrigation, minor irrigation programme, especially in the State of Bihar, West Bengal, Orissa, Madhya Pradesh and Uttar Pradesh is being accelerated. Energisation of pump-sets is receiving utmost attention. During 1981-82, about 4.22 lakh pumpsets are expected to be energised.

In 1982-83, additional irrigation potenial of 1.5 million hectares both from surface and ground water schemes is likely to be created.

In Uttar Pradesh, a pilot project of construction of 500 public tubewells has been taken up with the World Bank assistance since April 1980.

Under the crash programme of installation of private shallow tubewells in Assam taken up by 'Assam State Minor Irrigation Development Corporation' a target of installation of 3000 State Tubewells has been set.

National Water Development Agency

The Ministry of Irrigation had formulated a National Perspective for Water Resources Development in 1980 for conservation of flood waters of water-rich river basins during monsoon and making use of storage water in waterscarcity areas through a system of inter-connecting canals and storages-enroute. The scheme for surveys and investigations is estimated to cost about Rs. 107 crores and is expected to be completed in a period of seven to ten years. A provision of Rs. 30 crores has been made in the Sixth Five Year Plan under Irrigation Programme (Central Sector) for the purpose.

Command Area Development

The aim of the programme is to reduce the gap between created irrigation potential and utilisation thereof and to optimise agricultural production through better management of land and water in the command areas of selected irrigation projects.

The outlay in 1982-83 in the Central Sector is Rs. 45 crores and the State sector anticipated expenditure is approximately Rs. 100 crores. Till the first week of February 1982, Central assistance amounting to Rs. 16.45 crores has already been released as first instalment to nine States and one Union Territory.

Flood Control

With greater emphasis for providing complete flood protection to the unprotected regions, an allocation of Rs. 1045 crores was made in the Sixth Five Year Plan to provide reasonable degree of protection to an area of 2.55 million hectares. Since 1954, to end of March 1982 construction of 12652 km. of embankments, 25085 km. of drainage channels and 313 town protection works were completed and 4700 villages raised. The expenditure on these works upto March 1982 was about Rs. 1298 crores.

Brahmaputra Board

The Government constituted the Brahmaputra Board for carrying out investigations and drawing up of Master Plan for the control of floods, bank erosion and drainage in the Brahmaputra Valley keeping in view the possibilities of harnessing the waters of the valley for beneficial purpose, like irrigation hydro-power generation, navigation etc.

The problem of coastal erosion is also being tackled systematically particularly in Kerala.

Better days ahead

DHANNAPPA BASAPPA Kelaginamane of Sambrani village (Halliyal taluka of Uttar Kannada district) has reasons to smile when you query 'how are you?' 'Quite fine' he says. A person belonging to scheduled caste, he was sanctioned four acres of land but he could not afford to cultivate all of it till, he obtained two bullocks from Canara Bank through DRDS scheme. Also he got Rs. 2,000 as loan. He is now able to cultivate the entire land. His income has increased, he saves annually about Rs. 700. He is in a hurry to repay the loan, because he is anxious to buy a bullock-cart now.

R. K. Prahallada
Field Publicity Officer
Dharbad.

Economic Notes

Water for expanded lower Lagyap Power Project

THE WORK on the expansion of the Lower Lagyap Project has been completed by the Central Water Commission, and the waters were released recently by Shri Homi J. H. Taleyarkhan, Governor of Sikkim.

Sikkim will now benefit to the extent of 6 megawatts or 6000 kilowatts altogeher from Lagyap immediately after the testing period is over. With the commission of this project there should be no reason for any further loadshedding in the State. During the monsoons, power supply will be available as much as 12 MW.

Energy Conservation by BHEL

BHARAT HEAVY ELECTRICALS Ltd., Tiruchy, has set an example for energy conservation by waste heat utilisation. A waste heat boiler developed, manufactured and retrofitted by BHEL, at the tail end of the rotary hearth furnance generated 3.5 tonnes per hour of steam at 10 ata and 179°C. This waste heat recovery boiler, recently commissioned, now supplies steam for heating the acid bath of the pickling plant, 600 metres away, to remove the mill scales of the seamless steel tubes.

Fifty per cent S.C. families crossing poverty line

THE UNION MINISTER OF STATE for Home Affairs, Shri P. Venkatasubbaiah has said that the Government of India was deeply concerned about the problems of Scheduled Castes and the Prime Minister has attached high priority to the task of their rapid socio-economic development. Delivering his inaugural address at the Conference of the Managing Directors of the Scheduled Castes Development Corporations in New Delhi recently, he said that by the end of 1985 about 50 per cent of the Scheduled Castes families were expected to cross the poverty line. And to achieve this, the flow of funds from State Plans to the Special Component Plans for the Scheduled Castes was more than Rs. 4,000 crores. Another Rs. 600 crores would be added as Special Central Assistance.

The Minister said that implementation of all these schemes under the Special Component Plan had been brought into a sharper focus by inclusion of the aspect of accelerated development of scheduled castes in point 7 of the new 20 point programme. He expressed the hope that the Scheduled Castes Development Corporations would play a significant role in enabling the Scheduled Castes families to cross the poverty line. He said that with the larger flow of funds, it was essential that the programmes of the corporations be planned in detail and the persons posted for implementation of these programmes were dedicated to the cause. ☐

Development council for drugs and pharmaceuticals industry

A DEVELOPMENT COUNCIL for Drugs and Pharmaceuticals Industry has been constituted by the Central Government. The Council, known as the National Drugs and Pharmaceuticals Development Council, has been established under the Industries (Development and Regulation) Act. The Council will have 25 members. Their tenure of appointment will be for a period of two years.

Shri Vasant Sathe, Minister of Chemicals and Fertilizer, will be the Chairman of the Council and Shri Ram Chandra Rath, Minister of State for Chemicals and Fertilizer will be its Vice-Chairman.

Uran gas turbine scheme—stage II

The Planning Commission has approved the Scheme for installation of four gas turbines at Uran in Maharashtra for inclusion in the sixth five year plan. Units will be of 60 MW designed for LSHS|gas. The scheme includes provision for a 220 KV double circuit line for evacuating power from Uran extension. The cost of the project is estimated at Rs. 72 crores.

Bihar women in forefront in Family Planning

WOMEN IN BIHAR are in the forefront of family planning movement. This is evident from the fact that of 1,75,419 sterilisation operations done in the first quarter of 1982-83, vasectomy operations numbered only 18,858 against 80,939 tubectomies and 75,622 laparoscopic sterilisations.

Laparoscope has caught the imagination of women The wonder instrument makes a small incision in the abdomen under local anasthesia. A cold light is sent through the incision and with the help of a microscope attached to the laparoscope, the fallopian tube is located. A ring is shot into position on the tube to make it a knot and the operation is over in minutes. The patient has no need for hospitalisation and walks away after five hours with assured sterilisation. Seeing this, women are turning up in large numbers in the family planning camps that are held by 34 laparoscope teams in the State.

IRCON earns gross profit of Rs. 8.13 crores

DURING the year 1982-83 the Indian Railways Construction Company Limited (IRCON) registered a gross profit of Rs. 8.13 crores. The Bureau of Public Enterprises has fixed the target of Rs. 80 crores as turnover for this period, but the actual turnover was Rs. 101 crores which is 25 per cent above the target.

The target for 1983-84 has been fixed at Rs. 130 crores and it is expected that gross profit will be more than Rs. 11 crores.

The present workload of the Company is Rs. 558 crores, out of which foreign projects account for Rs. 469 crores. The workload of the Company is further likely to reach Rs. 650 crores in the year 1983-84.

Success Stories

State Bank helps a cobbler

SHRI M. NARASIMHA MURTHY a hardy man of 35 came to Andamans with his family consisting of four members in 1963. He came from a village of Andhra Pradesh in search of a better life. He had to lead a miserable life at his native village. After reaching to Port Blair Shri Murthy strove hard to feed his family. By profession Shri Murthy is a cobbler. So at the out set he started mending shoes with the tools he had. His earning average Rs. 2 per day with this meagre earnings he found it too difficult to feed his family.

Of late, help came from the Branch Manager, S.B.I., Port Blair. A loan of Rs. 640 was given to Shri Murthy at a low rate of interest in October, 1979. Shri Murthy purchased some materials for running his stall at Aberdeen Banon. Now he is earning Rs. 450 per month. He has constructed a small wooden stall and already paid back the major portion of the loan he took from the Bank. Shri Murthy is now happy.

Field Publicity Officer
Government of India
Port Blair.

S.B'I. comes to cheer up the villagers of Lalgudi

THANKS TO THE adoption by State Bank of India, the rural economic scene has undergone a rapid change in Lalgudi Area. Sirubayalur and Kanakiliyanallur are the two villages, adopted by Kattur Agricultural Development Branch of State Bank of India, since 1975. They are situated 25 Kms. from Lalgudi town. As part of their adoption programme, the economic conditions, per capita income and main occupation of these villages were studied and schemes were formulated to suit these people's requirements. The Bank officials used to visit these villages once in a week.

In the Siruvayalur village, 100 people were given a loan amount of 1.75 lakhs rupees to purchase Milch animals, 75 persons have repaid their loans. Fifty farmers were given crop loan amount of Rs. 1 lakh to raise chillies and paddy crop. During 1982, 10 harijan families were given loans under Integrated Rural Development Programme for purchase of Buffaloes. This year 20 harijans have been given loans for purchase of Milch animals with the normal interest rate of 4 per cent. 75 farmers were given crop loan amount of Rs. 3 lakhs to raise sugarcane, chillies, paddy and coriander. 30 villagers were given loans to the tune of Rs. 60,000 for purchase of bullocks. The bank advanced Rs. 1.5 lakhs to 80 members for purchase of milch animals. 4 persons, including a physically handicapped, were given a loan to the tune of Rs. 1000 each to run petty shop.

A coir making unit employing 20 persons and a dairy unit benefitting 15 people are functioning in this village with the bank's financial assistance. Because of the Bank adoption the people of these two villages are very much on the road to prosperity.

S. Subramaniam
Field Publicity Officer
Tiruchirapalli.

A farm labour starts a dairy

SMT. M. JAYASEELI and her husband are Harijan landless labour of Siruvayalur village of Pullambadi Block in Tiruchirapalli district. But their farm wages could not make them self relient since the agriculture is seasonal.

Agriculture Development Branch of State Bank of India, Kattur gave her a loan for purchase of Milch animal in January 1982, under Integrated Rural Development Programme. She has repaid the entire loan amount in time and thereby set an excellent example to other borrowers of that area. Now she owns a buffalo and a calf. This year the Bank has again given her a loan for purchasing another animal. Smt. M. Jayaseeli is grateful to the State Bank for timely help.

S. Subramaniam
Field Publicity Officer
Tiruchirapalli.

Toy making with a difference

FOR G. GANESAN, Secondary Grade Teacher of Government Primary School, Sankilipalayam, Pondicherry the toy making is his first love.

So, when National Council of Educational Research and Training organised the national toy making competition for pre-school and primary school teachers, Ganesan participated with enthusiasm. He bagged the first prize (cash of Rs. 500 with merit certificate) which he shares with another teacher Jagannath Tukaram Patil of Maharashtra.

As children are taught by the playing method, educational toys assume great importance in child's life. However, since it is not possible for all schools to provide expensive play materials to children, teachers are encouraged to innovate and design original and durable toys made from waste or low cost materials. Keeping this in view NCERT has been organising competitions of this kind.

V. Govindaswamy
Field Publicity Officer
Pondicherry.

BOOKS

Ricardian Dynamics

Theory of Growth and the Training of Ricardian Dynamics by Badal Mukherji, published by Oxford University Press, Delhi; pages 129, Price Rs. 55.

THE PROBLEMS OF GROWTH, planned or unplanned, continue to engage the attention of economists and planners all over the world. In discussions on the theory of economic growth there has been a conflict between neo-Ricardian and neo-classical schools of thought. Apparently, the consensus is that the former leads towards a radical view of society, while the latter relies more heavily on market equilibria. Shri Badal Mukherji argues, in this monograph, that in terms of their truly dynamic component, both the schools belong to the same Ricardian tradition in which the main components are competition, and the equality of savings and investment in a steady state. The real difference between these schools is in the static theory of pricing, especially of capital goods.

The main point in the book is that virtually all modern-day dynamic aggregative models belong to the Ricardian schools. This is because the models adhere to two fundamental axions viz.

(i) savings and investment provide the dynamics of growth; and

(ii) the economy is competitive.

The book is divided into seven chapters, and five appendices. A bibliography and an index have been also added at the end. The book includes useful illustrations with equations and diagrams.

The book requires a knowledge of basic Keynesian macro-economic statics. It will be extremely useful for students of economics in general, and in particular, those why may be studying the various problems relating to planning and economic growth.

The author, who is a Reader in the Delhi School of Economics, deserves to be complimented for presenting a rather difficult subject in a simple manner. The book is definitely a valuable addition to the existing literature on economic growth.

S. N. Khanna

Economics of Irrigation Projects

Economic Appraisal of Irrigation Projects in India by Basawan Sinha and Ramesh Bhatia; Published by Agricole Publishing Academy, D-76 Panchsheel Enclave, New Delhi-110017; First published 1982; pages 487; Price, Rs. 200.

THIS IS A HIGHLY illuminating study in economic appraisal of irrigation projects. It usefully reviews alternative approaches to pre-sanction appraisal such as those suggested by the Second Irrigation Commission, the World Bank and the UNIDO. The authors have discussed elaborately the methodologies and the social benefit cost analysis that could be applied in a study like this. The data pertaining to the Auranga Reservoir Project in Bihar have been sifted by way of an illustration.

The seven chapters of the book deal with the various ramifications of the elements that are involved in an irrigation project. A challenge is almost thrown open to programmers for testing economic worth of a number of alternative plans of utilisation. The authors believe that once a policy decision is taken at government level to include social objectives and adopt social benefit cost analysis, there will be no difficulty in its implementation.

On the issue of techno-economic analysis it is pointed out that though linear programming models are universally accepted as most suitable optimisation models, their application in regard to determination of optimum size of reservoir has not proved very appropriate and adequate because of our inability to define the benefit function accurately and explicitly. However, this method proves of immense use at the initial stage of planning as it provides an insight into the planning configuration and a close range of choice to be considered for further detailed analysis with the help of simulation studies. "The Systems Simulation is useful because it presents a rational approach to the problem of choosing between a range of possible alternative designs and enables the planner to modify the system characteristics in such a way as to optimize the value function of the system outputs." But then, it seems that it should be particularly helpful for irrigation projects in drought-prone areas wherein there is wide range of possibilities in regard to area to be irrgated, cropping patterns and their intensities, and productive versus protective irrigation.

The book is a good manual for policy-makers and administrators dealing with the agricultural sector of our economy.

Navin Chandra Joshi

Monitoring Corporate Sickness

Financial Ratios for Monitoring Corporate Sickness by Dr. L. C. Gupta, Published by Oxford University Press, New Delhi, 1983; Pages 132, Price Rs. 70.

AT A TIME when corporate sickness has emerged as a matter of incipient concern in the country, the book under review by Dr. L. C. Gupta, a director of public sector enterprise and an eminent academician, is a timely document that depicts how financial ratios can be scientifically and systematically evolved to determine and possibly foresee corporate sickness at a sufficiently early stage to avert "the process of economic degeneration". The author favours realignment of managerial policies and plans to know what would be in store for an enterprise as well as its standing and financial viability. While examining the issue both statistically and logically, Dr. Gupta scans a wide range of ratios to determine the best set not only for identifying potentially sick firms but also the more general purpose of arranging firms according to degrees of financial soundness. According to the author, bankrupt/non-bankrupt classification does not seem very apt in the Indian context. The failure of an enterprise in the country usually results not in a bankruptcy supplication but in government-takeover of the failed or 'sick' unit. Besides, the bankruptcy stage is too advanced to allow for launching any 'effective corrective action'.

Pointing out that the real strength of an enterprise should be evaluated not in absolute terms but in relative ones, Dr. Gupta notes that the reason why the relative aspect of profitability needs to be stressed is that sharp swings supervine from time to time in general business conditions or in the fortunes of particular industries, pushing up or down the 'absolute profitability' level and several other financial indicators of all firms.

Dr. Gupta points out that the real strength of an enterprise emerges from its production cost efficiency, i.e., its ability to produce at the most competitive cost and this is reflected in the relative gross sales margins earned by different firms for comparable products. Whereas ratios derived from the balance sheet suffer from several foibles, 'solvency' ratios are, however, more reliable indicators of strength than any liquidity ratios because the solvency ratios measure the relative reliance on debt.

Noting that banks rely on liquidity ratios, the author avers that they are 'no good' as early warning signals of corporate sickness. The book has analysed threadbare the various ratios that would go in the making of an enterprise's financial vigour and how best it could weather crisis if faced with an imminent threat from an opponent. Both students of management and entrepreneurs who like their account books to reflect precision and sophistication should not miss this document as the author has a rich feast to offer by way of his profound knowledge and wide experience over the years.

G. Srinivasan

(Continued from page 16)

Concluding remarks

Although the MRTP Act provides for the protection of consumer interest from monopolistic and restrictive trade practices of manufacturers and distributors and from concentration of economic power in a few hands, the implementation of these provisions leaves much to be desired. The Government has evinced little interest in invoking its powers of making references to the MRTP Commission for inquiry into monopolistic and restrictive trade practices as also in matters relating to the concentration of economic power. Consumers have also failed to exercise their right of protection under the Act by bringing to the notice of the MRTP Commission the cases of restrictive trade practices indulged in by unscrupulous businessmen. The Government has not made optimum use of the Commission's expertise in matters relating to the concentration of economic power, where consumer interest is of vital importance.

Wide publicity of statutory provisions for regulation of monopolistic and restrictive trade practices should be made and the rights and responsibilities of consumers and the Government in this behalf be highlighted. The provisions of the MRTP Act have remained ineffective because of inadequate powers and resources of the MRTP Commission, ineptly drafted legislation, interference of High Courts and the Supreme Court at the initial stage of inquiries. The MRTP Act, therefore, needs suitable amendments in order to make it an effective instrument of consumer protection.

Twenty Point Spirit

M. Sunaina

Inhaling twenty points spirit
Infusing practical dedication
Move forward;
Envy, thoughts congested
Are driven out far
Cultivate Nationhood in every heart
Preach, Twenty points to nook and corner
Life is watered by courage
Nation moves forward by plans
Labour only creates good harvest
Love only enhances prestige of the country
Awake Oh, Companions
Goal ours is peace revolution
Service brings prosperity
Come lit the love lamp
Distribute the wealth to brothers
   who have lost your way

Twenty Point survives Democracy
Poverty, hunger all many
Linger no more, where
Twenty points guard and stand as sentinals.

Our contributors

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The 20-point programme monitoring cell reports . . .

11B

[illegible]

It is proposed to bring three million hectares of land under irrigation in each of the remaining three years of the Sixth Plan. Energisation of pumpsets enables the irrigation of new areas. As against a target of 3.78 lakhs, 3.19 lakh pumpsets (84.4%) have been energised up to the end of March 1983. Statewise performance above 50% of the required average is given below :—

State	Target	Achievement April 82 to March 83	% achieved
Jammu & Kashmir	28	78	278 6
Punjab	20,000	25,766	128.8
Karnataka	20,000	25,557	127.8
Himachal Pradesh	100	125	125.0
Madhya Pradesh	32,000	38,478	120.2
Maharashtra	60,000	71,355	118.9
Rajasthan	10,000	10,485	104.9
Andhra Pradesh	56,000	53,355	95.3
Kerala	12,000	10,020	83.5
Haryana	20,000	15,785	78.9
Orissa	5,100	3,777	74.1
Tripura	300	205	68.3
Uttar Pradesh	36,000	23,664	65.7
Tamil Nadu	30,000	19,444	64.8
Gujarat	20,000	10,145	50.7

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9A

House Sites

The implementation of the rural house-sites programme has been stepped up substantially. As against a target of 10.43 lakhs, 10.07 lakh families (96.5%) have been covered upto the end of March 1983. Statewise performance above 50% of the required average is given below :—

State	Target	Achievement April 1982 to March 1983	% of achievement
Gujarat	40,000	1,21,005	302.5
Madhya Pradesh	15,400	37,854	245.8
Rajasthan	50,000	1,15,160	230.3
Uttar Pradesh	70,000	1,51,137	215.9
Tamil Nadu	80,000	1,16,683	145.9
Haryana	20,000	20,049	100.2
Himachal Pradesh	40	40	100.0
Karnataka	[illegible]	[illegible]	87.0
Tripura	[illegible]	[illegible]	71.8
Andhra Pradesh	[illegible]	[illegible]	70.3
Orissa	[illegible]	10,940	60.8
Assam	17,460	9.747	55.8

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NEW HORIZONS IN
TELECOMMUNICATIONS

VOL. 27 NO. 11

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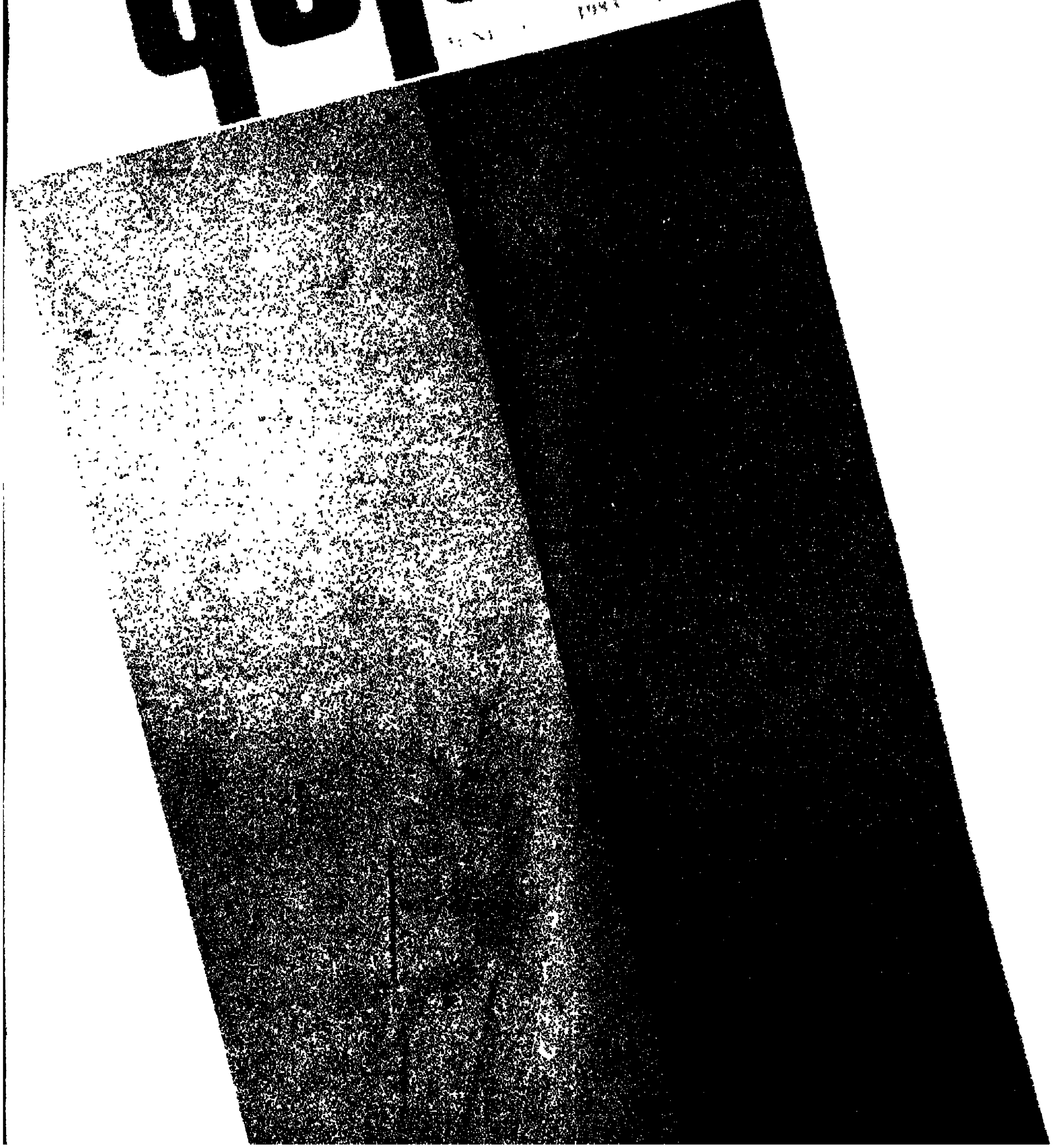
JUNE 1 1983 RUPEE ONE



[illegible]

8

[illegible]

The object of this programme is to ensure safe drinking water [illegible] villages [illegible] suffering from chronic scarcity or having unsafe source of water. [illegible] Sixth Plan [illegible] efforts would be made to cover all these identified problem villages [illegible] potable water available throughout the year. As against a target of [illegible] villages [illegible] villages have been provided with at least one source of drinking water during the period April 1982 to March 1983.

Statewise performance of above 50 per cent of the required average is given below

State	Target	Achievement April 1982 to March 1983	% of achievement
Uttar Pradesh	1650	5619	340.5
Maharashtra	3373	10127	300.2
Andhra Pradesh	1875	3709	197.8
Karnataka	3000	5830	194.3
Jammu & Kashmir	226	435	192.5
Sikkim	30	51	170.0
Rajasthan	2700	4060	150.4
Madhya Pradesh	5500	7602	138.2
Bihar	2284	3015	132.0
Orissa	1880	2291	121.9
Kerala	100	113	113.0
Punjab	70	77	110.0
Haryana	321	350	109.0
Manipur	190	203	106.8
Gujarat	3000	3043	101.4
Tamil Nadu	3000	2869	95.6
Himachal Pradesh	1240	1071	86.4
Assam	2009	1728	86.0
Tripura	633	384	60.6

YOJANA

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New horizons in development-oriented communication technology

We should initiate a well-funded project for implementing the communication network which will employ all the technologies of the 90s. Starting from now, a ten year project should be commissioned so that when the pilot network is completed, by 1990, we would be ready with technologies and pilot-scale experience for the network of the 90s. The pilot project should be so designed as to enable us to widen the network on a nation-wide scale utilising those technologies which have proved their viability under Indian conditions.

Dr. N. Seshagiri

ADVOCATING THE VIEW that a development-orientation to communication technology has to be given by developing countries like India, an integrated project is proposed which will have far-reaching impact on our economy in general and communication media in particular, if it is implemented with a sense of urgency. A brief outline of the concepts behind this proposal is given here to enable more indepth consideration.

Out of the several roles communication plays, we may choose one sharply focused role which is of paramount importance to the country-communication as a catalyser of development including communication as an alternative to travel. The impact of this role is proposed to be maximised utilizing technologies which will be contemporary at the time our implementation is completed. In other words, we will have to do a technology forecasting appropriate to this role in the conditions in which it is implemented in the country. The proposal is to develop a pilot communication network on this mission-oriented basis.

Goals of the Mission

Communication technology works best as a complement to concomitant social change, to changing resources and to a changing user profile. Communication technology can be applied to a wide variety of development problems as a component in a variety of strategies. A spectrum of possible strategies exist and a spectrum of technological options to implement those exist in the process of evolution in the foreseeable future. Our first objective is to choose those communication strategies which will have maximum impact on socio-economic development. Once this profile of strategies is obtained, we may choose that set of communication technologies which will be optimal at the time the communication network becomes operational.

(i) *Communication as a one-way information distributor.*

In Gautemala, a developing country in South America, radio broadcast based communication was tried as a low cost substitute to the setting up of agricultural extension services on a widespread basis. That was a good example of the use of communication as a loud speaker—extending the voice of expertise where it would not otherwise go. This is one feasible information distribution strategy. The technology for this need not necessarily be just the conventional radio broadcasting of the type going on in the country. If the cost-benefit ratio is favourable, one can even consider satellite based communication or some other technology which may really be appropriate for the purpose.

(ii) *Communication as an Institutional catalyst*

El Salvador tried an Instructional Television (ITV) system as a core of an extensive educational reformation. ITV caused concomitant restructuring in other components of the educational system. ITV help build up sufficient political momentum to overcome the inertia of educational bureaucracy. In short, communication media was used as an agent for a chain reaction of organisational reforms. Here, institutional morphosis is the communication strategy and ITV is the choice of the technology agent.

(iii) *Communication for the equaliser strategy*

It is an acknowledged phenomenon that in the distribution of teachers or educational resources or agricultural extension agencies or health services, the rich get richer in a free-for-all-situation. Unequal distribution of resources may be inevitable in a country like ours where, every type of resource is limited and the ability of different segments of the population or regions to make claims on those scarce resources are also unequal. Though, at first, it may seem paradoxical, the communication satellite, considered as the most capital intensive high technology, can fulfil this equalising function of communication. The SITE experiment using ATS-6 communication satellite was a clear example. It showed that information and instruction can be made to reach villagers that were beyond the range of land-based broadcast distribution networks. But the SITE Programme had a mixed objective before it. If it had been designed on the basis of a sharply designed objective, the impact would have been even more dramatic. The tragedy of the situation here is that our country is becoming complascent to following up on proven advantages of SITE whereas, some of the United Nations' family of organisations are so thrilled by it that they are planning in a big way to assist some developing countries to adopt the SITE pattern. They have pronounced the SITE experiment as grand success whereas we are still debating whether it has been a success.

(iv) *Communication as a quality upgrader*

In Nicaragua, a mathematics project was tried utilising a judicially designed communication medium. They brought all the experienced mathematics teachers to design a mathematics curriculum for a Computer-aided Instruction (CAI) coupled to a radio-based medium. They spent one year in developing it, designing the curriculum, producing programmes with feedback from class-room observation and testing. This gave a substantial quality improvement complementarity for the regular mathematics teaching. Another successful example is the British Opeh University educational communication system where exposure to engineering methods and practices are communicated to distant educational centres making a judicious use of CAI and communication technology. This is all the more relevant to India, because, quality improvement in training depends on whether the trainees are exposed visually to more and more sophisticated equipment. To have a spectrum of such equipment in every college could prove prohibitively costly. Quality of training will substantially improve if they even see a television telecast or a movie showing these equipment and machines in operation.

(v) *Communication as an accelerator of interaction*

In Alaska, small villages have only one or two persons entrusted with health care for members of the community who are given about six weeks of training to provide normal health care. These 'bare-footed doctors' are supported by two-way radios and later a satellite which afforded them daily contact with a physician at a regional hospital. Similar experiments are on the board in China. This communication acceleration can have significant development catalysis effect in India.

We can have a detailed list of specialists and consultants stored in a regional computer. When an industry in some part of the country has some specialised problem, the information from the computer can inform through a suitable communication system, who is the nearest specialist or consultant who can help solve the problem. In the first instance, verbal suggestions may be received from the specialist followed by a personal visit if it becomes necessary.

(vi) *Communication as a feedback channel*

In Senegal, a programme called, "Radio Dissoo" was introduced to receive complaints, questions and view points from rural audience. Analysis of the large scale rural use of the feedback channels in many cases, help to modify the Government policy on social and economic matters.

(vii) *Communication as a substitute for travel*

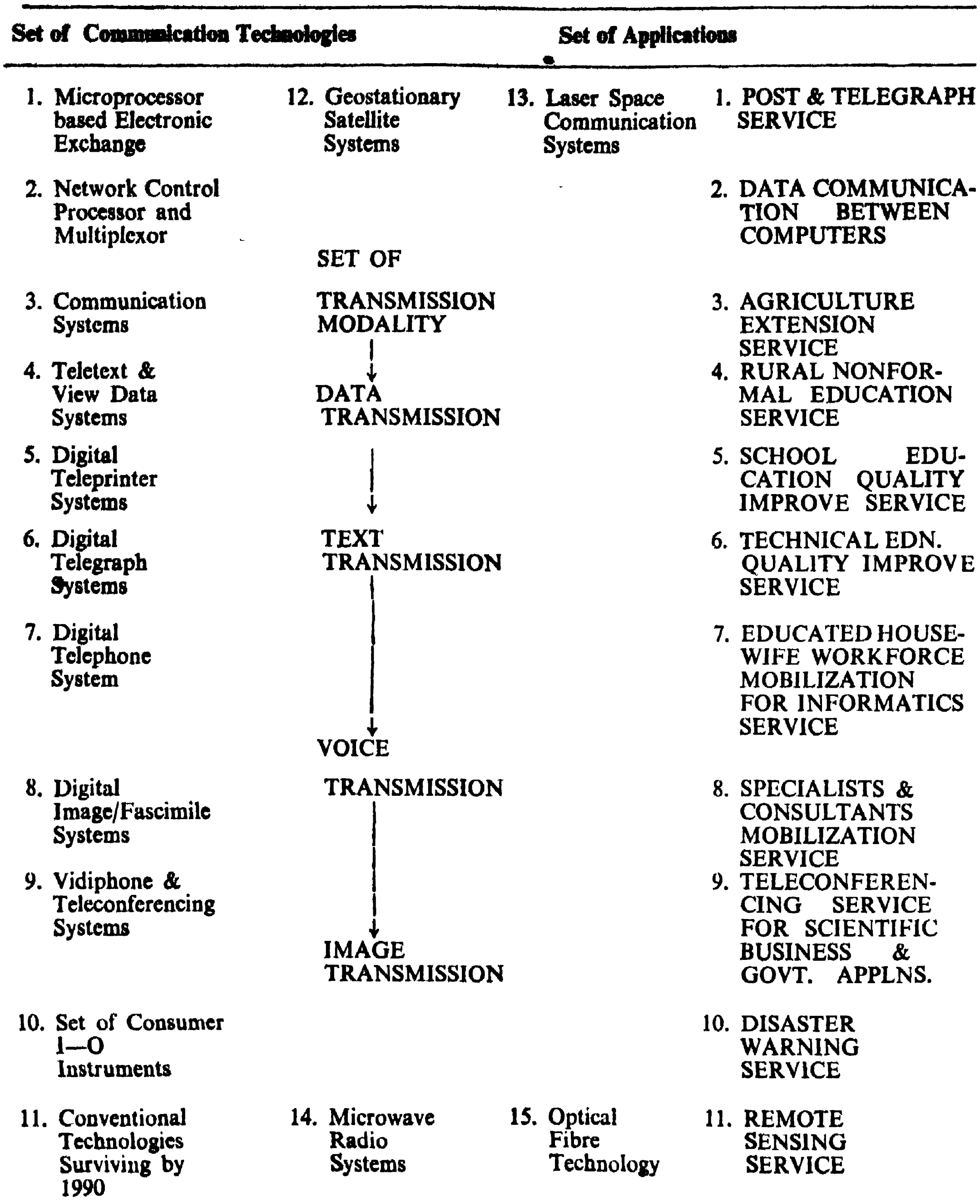
Communication as a substitute for travel usually arise from the inevitable drive to minimise energy consumption and time consumption. A very interesting study was made sometime ago by Long Range Studies Division of the Post Office Telecommunication in the United Kingdom. They have computed the energy required for tele-conferencing as compared to actual travel and face to face conferencing. Tele-conferencing involves, firstly a transmission, secondly a switching of the signal exchanges to connect two ends of a goal and thirdly the operation of the terminal equipment like the TV cameras and the loud speakers. The study shows that for a typical case of a long distance business travel, energy savings are of the order of 200 kwh or more. It may even go up to 2 Megawatt per trip by using a video conferencing system instead of actual travelling. Now, new techniques are coming up: optical fibres, compression of signals into narrower band widths, the use of redundancy reduction techniques and so on. Advanced methods of audio and video tele-conferences are also emerging which are becoming more and more cost-effective. These and many more communication technologies may tilt the scale more and more towards tele-conferencing over the next two decades. However, audio and video tele-conferences are effective only for meetings involving information exchange, brain-storming, cooperative problem solving or routine decision making. But, where bargaining or getting to know or persuading people is required, tele-conferencing is not effective as they would need a face-to-face meeting. A statistical study shows that for an urban trade information exchange environment between 30 to 50 per cent of the existing meetings could be effectively conducted by audio tele-conferencing. Video tele-conferencing adds another 25 per cent to this estimate. Only a remaining 25 per cent would require face-to-face communication. This is in the nature of shape of things to come, which has, however, been successfully experimented between Space Application Centre at Ahmedabad and the National Centre for Software Development and Computing Techniques (NCSDCT) at Bombay.

Seven typical examples of the possibility of catalysing development using communication are given above. There may be many more which are to be carefully looked into so that we arrive at an optimal set of strategies for the impact of communication on development.

Broad Features

Let us see how we can go about accomplishing such an objective utilising a set of communication technologies which are most likely to be optimal technologies for the country by 1990 and will have viability upto 2000 AD. I gave some thought to this technology forecasting problem and have come up with one feasible futuristic communication network as a suggestive fore-runner for brain-storming among communication engineers in the country. The outline of the network is given in the figure. (page 6)

In this figure, we identify a set of transmission modalities—principally, data transmission, text transmission, voice transmission and image transmission—each representing a distinct culture of communication technologies. A set of 11 applications have been identified as being representative of the impact of communication on development. Similarly, a set of 15 communication technologies have been identified as the technologies which will be predominent by 1990 and which will continue to be contemporary atleast upto 2000 AD. The excercise here, is to determine that combination of these technologies which will give effective service for the set of 11 application areas indicated. A brief outline of these 15 technologies will now be given :



Set of Communication Technologies | **Set of Applications**

1. Microprocessor based Electronic Exchange
2. Network Control Processor and Multiplexor
3. Communication Systems
4. Teletext & View Data Systems
5. Digital Teleprinter Systems
6. Digital Telegraph Systems
7. Digital Telephone System
8. Digital Image/Fascimile Systems
9. Vidiphone & Teleconferencing Systems
10. Set of Consumer I—O Instruments
11. Conventional Technologies Surviving by 1990
12. Geostationary Satellite Systems
13. Laser Space Communication Systems
14. Microwave Radio Systems
15. Optical Fibre Technology

SET OF TRANSMISSION MODALITY → DATA TRANSMISSION → TEXT TRANSMISSION → VOICE TRANSMISSION → IMAGE TRANSMISSION

1. POST & TELEGRAPH SERVICE
2. DATA COMMUNICATION BETWEEN COMPUTERS
3. AGRICULTURE EXTENSION SERVICE
4. RURAL NONFORMAL EDUCATION SERVICE
5. SCHOOL EDUCATION QUALITY IMPROVE SERVICE
6. TECHNICAL EDN. QUALITY IMPROVE SERVICE
7. EDUCATED HOUSEWIFE WORKFORCE MOBILIZATION FOR INFORMATICS SERVICE
8. SPECIALISTS & CONSULTANTS MOBILIZATION SERVICE
9. TELECONFERENCING SERVICE FOR SCIENTIFIC BUSINESS & GOVT. APPLNS.
10. DISASTER WARNING SERVICE
11. REMOTE SENSING SERVICE

Set of Communication Technologies | Set of Applications

1. *Microprocessor-based electronic exchanges* : Improvements in communication technology show a trend towards the network use of computers including digital encoding and transmission of signals, grouping of signals into bursts that can share a common channel with other such bursts, new switching techniques etc. and at the core of all these, is going to be the versatile microprocessor. The basic techniques of digital transmission—transmission of precisely controlled streams of bits rather than wave forms—allows microprocessors to be inter-connected over compatible digital communication channels. It also allows digital error correction to preserve information accuracy transmitted over long distances. The hub of such activities is going to be a microprocessor-based electronic exchanges insofar-as public communication services are concerned.

2. *Network control processor and multiplexer* : Burst multiplexing and switching increases the efficiency of communication channel use by allowing single channel sources to be shared by multiple data source and receivers. A variety of useful multiplexing techniques such as electronic fast connect circuit

switching and highly flexible time division networks and the packet-switching techniques will be fully deployed by the 90s.

3. *Communication systems* : The computer on a chip meshing with communication equipment will become important in the 1990s. Intelligent terminals or microprocessors will process data by referring the same to a central computer through a common carrier. Such terminals may even form part of a global communications network.

4. *Tele-text and View-data system* : In the home of the future communication tele-text and view data system will become a common-place. They are media for transmitting texts and simple graphics to a television receiver through digitally encoded transmission with the information organised into pages.

5. *Digital teleprinter system* : Telex network will increasingly go digital. Teleprinters will become electronic with built-in control units. Message storage function will be built into the telex networks. It will then be possible for the telex subscribers to send telex messages to the telex systems and have them stored there particularly during busy period when many lines are engaged, until the system can automatically set up a connection to the addressed subscriber and transfer the message. This will be in the nature of automated queueing. This will help the transmission of greater volume of telex message.

6. *Digital telegraph systems* : The Morse code telegraphic I|O terminals will get stored in binary digital form in logging computent and will be scheduled automatically depending upon the urgency and length for transmission to different destinations via the satellite.

7. *Digital telephony system* : A digital telephone system has gone into operation in Calgary, Canada, super-posed on existing twisted pairs telephone lines without disruption of existing services. The system will also give digital data services, video texts services displaying data on television and energy management for the home. Digital telephony is fast growing in several countries especially Japan, Sweden and West Germany. It is only a matter of time before analog telephone systems become fully digital. Cost-wise, digital telephones derive their strength from the exponential decrease of costs of microprocessors and memory. Digital networks are easier to maintain than analog. They can cope with considerable traffic and are versatile.

8. *Digital Image/Fascimile System* : By 1990, fascimile transmission would be firmly established and its uses will be widespread. Fascimile computer-communication services are expected to become quite popular. The number of fascimile terminals are rapidly increasing. They are used to scan a document, to send it to a remote destination and reproduce without errors. Fascimile systems will be used increasingly for end-communication having access to a computer.

9. *Vidi-phone and Tele-conferencing*. Presently systems for video telephone exists though they are too expensive to be used on a large scale. Camera and picture screen with digital operation will progressively use more and more LSI devices for source coding and buffer stores. Television cameras based on CCD circuit techniques will be prevalent. It is likely that video information from the camera will be in time division form with amplitude modulated sample per picture point. Regarding display units, experiments are going on with both liquid crystal and glow matrices. By 1990, we can reasonably expect flat-pack picture display units. Digital telephone network and satellite communication can be used where tele-communication conferences are to replace personal meetings. Potential need for conference telephony will increase. Teleconferencing involves a transmission (perhaps using a geo-stationary satellite), the switching of the signal exchanges to connect two ends of a call and the operation of the terminal equipment like a television camera or the loud speakers.

10. *Set of consumer I/O instruments* : The input output instruments at the consumer and will closely train behind the sophistications of low-cost I|O peripherals of computer networks.

11. *Surviving conventional technologies* : By 1990, several of the conventional technologies in use today, may go out of use. However, there are a number of technologies which will survive right through the 90s. It is essential to identify them and strengthen activities in those areas.

12. *Geo-stationary Platform* : It is predicted that the future of satellite communication is oriented towards the use of geo-stationary platforms incorporating large, multi-beam antennas. On the platform, signals could be switched between spot beams and they could also be switched between transponders operating at different frequency bands. Since the platforms can provide high gain antennas, the large number of earth stations below can use a small diameter antennas, low cost, low noise receivers and low power transmitters. Also, because of the platform's extensive switching capability, the earth stations could use simple baseband equipment.

13. *Laser space communication systems.*

14. *Microwave radio systems.*

15. *Optical fibre technology* : Fibre Optics transmission systems are a new technology that will enhance information carrying capacity of both local communication networks and probably longer range networks. Using modulated light to transmit digital information along fine fibres of optical material, compared with copper wire, they offer large information carrying capacity, low rates, small diameter, freedom from cross-talk and electrical radiation and low costs. Fibre optics provide an information carrying capacity as high as that of an expensive shielded video cable at a cost comparable to that of the conventional copper wire pairs used for telephones. For a copper-starved country like India fibre optics is a boon. The

(*Continued on page* 17)

World Communication Year

Communication 2000

One of the biggest obstacles for economic and social progress is inadequate communications infrastructure. In developing countries, the telephone density is extremely low and telecommunications have not yet reached rural areas. In this article, the author explains the purpose of World Communication Year (WCY) and says that WCY-83 is a specific set of activities to increase the scope and effectiveness of communications as a force for economic, cultural and social development.

Lt. Col. J.W. Hunt

THE YEAR 1983 is being celebrated as the World Communication Year (WCY-83) by the United Nations. It states that the purpose of the World Communication Year is the 'Development of Communications Infrastructure'. Infrastructure can be broadly divided as common carrier telecommunications, broadcasting and television, aviation, shipping, transport, meteorology, education, agriculture, health, postal services and industry. WCY-83 is the successful conclusion of four years of negotiations on the inter-governmental level.

It has been realised that one of the biggest obstacles for economic and social progress is inadequate communications infrastructure. In most developing countries the telephone density is extremely low and telecommunications have not yet reached rural areas.

It is expected that WCY-83 will provide the opportunity to undertake an in-depth review and analysis, the policies on communications development. WCY is a specific set of activities to increase the scope and effectiveness of communications as a force for economic, cultural and social development. The principles and objectives for the year have been defined by governments and adopted in resolutions of the UN. General Assembly, the U.N. Economic and Social Council (ECOSOC) and I.T.U. Administrative Council.

Quantum Leap

The year is an opportunity for a "quantum leap" in the development of a complete world communication. network which will leave no one isolated from local, national or international community. The year's programme calls for the harnessing of all possible resources towards the accomplishment of its objectives.

The growth of communication facilities varies greatly from country to country. In some it is minimal. In some it is haphazard. In some it is unbalanced. With no "Master Plan" to be imposed, the year is an opportunity for realistic, national analysis, review and planning to meet most speedily and effectively the communications needs of each country.

Special attention is being given to the communications needs of developing countries. A vision of the future, however, unrealistic it may seem, is a prerequisite for appreciation of human endeavour required for achieving set targets.

Information Revolution

Information Revolution is still in its infancy and enormous changes are expected before it reaches maturity. No one can predict in detail where it will finally lead. The broad outlines are easily discernible. The tremendous advance in Semi-conductor Technology, Digital Communication Systems, Computer Application and its invasion into all walks of life, the successful commercial utilisation of laser and light transmission techniques using optical glass fibre, the vast potential of cheaply placing satellites in orbits and retrieving them and a number of interdisciplinary developments taking place all over the world give us the hope that it is well within the realm of reality to bring the fruits of communication technology to the doorsteps of the mankind as a whole.

The hypothetic communication model to be imaginative and realistic needs to be correlated to the society that we visualise would exist in the year 2000. If to that hypothetic model we super-impose the facilities and amenities of communications techniques of the future, possibly this would be a near accurate model of what would be the state of the art of communication. In order to discern the potential of the development of communication it is necessary to take stock of the advances of media and system. Let us take a quick look at the state of things in these areas.

Electronics

One singular and spectacular development in this field is that of micro-electronics. Against the component Print Cart Board, one electronic siliconwafer chip which might reside on the tip of your finger may contain thousands of electronic elements in a network. All put together they may constitute of 16 bit logic chip of a calculator and may cost as little as Rs. 150-200.

From the micro-electronic chip to the micro chip and the micro-processer functioning on the prinicples of computer, working on a hexadecimal code, this tiny configuration of electronics could well organise a thousand operations inside the bonnet of your car and make the driver a dummy.

Computers

The phenomenal growth of semi-conductor technology and the proliferation of semi-conductor memory devices has brought into the society computers that you can carry. Personal computers that can do anything for you, say sketch a new car, or an airplane, record a message and phone back an answer, will be available.

Digital coded time division multiplying systems enable network development and communication realisation a total reality. Reliable systems, interworkable through satellite, submarine cables, optical fibres and laser systems have given promise of establishing worldwide communication systems which can interact at will.

When we think of the media for communication, one of the first things which strike us is the newspaper. The production and distribution of a paper eat into our natural resources of wood pulp. It is closely followed by the radio which transcends the need to be dependent on one particular source, permits independence and freedom of movement. One of the inherent drawbacks of the radio is that it does not satisfy the vision and hence the television. Various other models of personalised communications like telephones, private radio and television network, close circuit TV systems etc. satisfy the needs of the society and industry.

Electronic cottage

The famous social scientist Alvin Toffler visualises that the most integral element of the future society, its home, would be an "electronic cottage".

As you walk up the garden path to his gate a display panel in front of hut on which the landlord is watching the tele-text newscast (comparable to the newspaper of today) sounds a beep and the closely formated news feature disappears from the screen and up comes the picture of the man at the gate—that's you—staring at him. The landlord presses the button to talk key on the key board and says "Hello would you like to come in"—the spoken word already logged into the computer memory. If to this query you say "yes, I would love to", he presses the release gate lock button and the gate swings open and as you walk in, closes shut behind you. The image on the screen goes on to the home computer memory. The tele-text pops back. He presses the stop halt programme and stands up.

You walk upto the front door and as you step on the foot mat, the door opens automatically. You are met by the landlord, you shake hands, walk up and sit down. On your request that you are from Goa (India) and wanted a look at the cottage 2000, the landlord describes himself as a terimobile (terrain mobile) designer, which is a solar powered computer controlled buggy like the present day car. He invites you to his work console and in front of you is a computer terminal connected to the factory where he works on a 256 K bit data modern. "I work here", says the landlord. Morning 9 o'clock, and the days' job requirements are printed out on the data modem terminal and the display console. He applies his ingenuity and intelligence and works on it. At 12.00 he feeds the results back and he has finished his work for the day.

He limits his description of his cottage to communications only. The newspaper is replaced by tele-text, the radio continues but with limited locality safety uses only. Television has replaced it and on the screen you can get any programme generated at any part of the world live via the satellites. On your request for a call to Delhi the electronic pic-o-phone with no wires, is ready. There in front is your friend from Delhi speaking to you with a broad smile, wondering how you managed it up there.

Meanwhile, someone comes and requests the landlord to dial the departmental stores and find out whether a Kashmir Shawl has arrived. The landlord dials the departmental stores sales directly and the price list page appears on screen and he finds that it has not arrived from Delhi.

You promise the wife of the landlord to send her one, hurry out and take the first flight to Goa, via Bombay.

The needs of the nation in the communication area can be classified into: (a) primary area communications requirements; (b) secondary area communications requirements; and (c) tertiary area communicatons requirements. The classification of these areas is not geographical or geo-political. It is basically socio-economical and developmental based. It cannot be denied that certain areas because of its intrinsic and inherent characteristics have a distinct advantage and edge over other for development, manpower, resources and culture.

In the light of these findings it is felt that there is a need to review, analyse and restructure the communication needs of the territory. Communication or like P&T, A.I.R., Doordarshan, Meteorology, Shipping, Aviation, etc. would only commit resources on a present value annual charge based economic study. It is upto the society to independently evaluate its needs for communication based on the broad outlook for an emancipated society of 2000 A.D. ☐

Students make Solar Cooker

A BATCH of sixteen final year Mechanical Engineering students of Muthiah Polytechnic, Annamalai have under the watchful eyes of the staff of the mechanical engineering department, developed a solar cooker. The cooker can easily be installed at a very low cost. It is suitable for the classes of people, both in rural and urban areas

The soar cooker consists of a wooden box, plain glass cover, galvanised iron tray, thermocol, material for insulation, foam sponge sealings and utensils.

V. Govindaswamy,
Field Publicity Officer,
Pondicherry.

Rural industrialisation in India-1

The country has recorded satisfactory gains in per capita income and moved forward in the process of industrialisation, but the pattern of employment has remained virtually unaltered. Efforts have been made to promote small scale and cottage industries. In order to make the rural industrialisation programme an effective instrument for ameliorating the rural poverty it is necessary that output, employment and technological appropriateness for the sector are well harmonised.

Hari Dev Goyal

INDIA'S ECONOMIC problems compounded during the colonial rule and the need for planning as a method for solving these problems was felt long before political independence. India embarked upon this path of planned development of her economy in 1951 through five year plans. Throughout these years there has existed a national consensus on four objectives : a high growth rate, modernisation of Indian economy and national self-reliance, full employment and the reduction of economic inequalities. As far as the first two objectives are concerned, the rate of growth during the last three decades have enabled the economy to come out of prolonged stagnation of the colonial period, with significant performance in import substitution (at what cost is debatable), technological development, export promotion and considerable self-reliance. But these achievements have been overshadowed by the other two most disturbing aspects of economic development in India : (i) failure in containing the problems of unemployment and underemployment, and (ii) increasing absolute poverty.

Development of industries in rural areas has been thought as a solution to these two problems even before the attainment of political independence. This subject-acquaintance paper attempts to outline the shifts in employment pattern and discusses the approach|strategy of rural industrialisation in five year plans, institutional set up provided and the Plan allocation for this sector. Various schemes|programmes for the development of industries undertaken upto March 31, 1980 as well as promotion of traditional and modern small scale industries, achievements and failures of efforts made during the last 30 years are also included. Paper ends with programmes and approach adopted in the Sixth Five Year Plan (1980—85).

Unemployment and Surplus Labour

India's population has grown from 361 million in 1951 to 685 million in 1981 at an average annual growth rate of about 2.4 per cent. Population of the country continues to be essentially rural in character with 76.69 per cent people living in rural areas. Labour force has also increased from 185 million in 1950-51 to 265 million in 1978. Figures for the later years are not available but it is estimated that more than 300 million people were in the age-group of 15—59 years in 1981. Regarding absorption of this labour force during the first three plans (1951—66), there were in March 1966 about 10 million people who were willing to get jobs but could not, as shown in the table below :

Table 1 : Unemployment and Surplus Labour in India (1951—66).

(In million)

	I Plan (1951—56)	II Plan (1956—61)	III Plan (1961—66)
1. Labour force at the beginning of the Plan. . .	185.2	197.0	215.0
2. Net additions to the labour force during the Plan	9.0	11.8	17.0
3. Back-log of unemployed at the beginning of the Plan	3.3	5.3	7.1
4. Total (2+3) . .	12.3	17.1	24.1
5. Additional jobs created .	7.0	10.0	14.5
6. Back-log of unemployed at the end of the plan (6-4-5) . . .	5.3	7.1	9.6
7. Unemployed as per cent of total labour force (6/1 x 100) . . .	2.9	3.6	4.5

Source : RBI Bulletin, December, 1969.

Within the next twelve years their number swelled almost twice. Counting in person years (a person working for 273 days and 8 hours a day is counted as person year), the total unemployment in March, 1978 was of the order of 20.6 million years—16.5 million in rural areas and 4.1 million in urban areas.

While the country has recorded satisfactory gains in per capita income and moved forward in the process of industrialisation, the pattern of employment has remained virtually unaltered. The data on industrial distribution of work force in the last seven censuses, 1911—1971, show that the proportion of work force dependent on agriculture and allied pursuits varied between 72 and 74 per cent. The proportion of work force in industry was struck up at 10 per cent even though the share of these sectors in output showed substantial relative gains during the same period. This shows that there have been changes in the product-mix and technology in the non-agriculture sector which have reduced its labour absorptive capacity. Secondly, there has been certain very disturbing shifts in the employment pattern which can be seen from the fact that the share of landless agricultural labour in the total work force in the primary sector has increased substantially as a fall out of the implementation of land reforms (whatever be the achievement or failure). There has been displacement of artisans as the rural industries have been stagnating for some time. Unfortunately, the rural artisans and persons engaged in village industries are opting for more remunerative employment on the farm where new technology has made its impact.

In the light of these facts when agriculture sector on the whole is already suffering from surplus labour force and modern sector has limited absorption capacity, case for development and promotion of labour intensive industries in the rural areas for creating employment opportunities and for generation of additional income needs priority in our development planning efforts.

In this paper, rural industries sector has been taken as consisting of (i) traditional cottage and household industries viz., handloom, khadi and village industries, handicrafts, sericulture and coir industry, and (ii) modern small scale industries. Admittedly there exists a difference of opinion because of locational and technological factors, over inclusion of these industries in the rural industry sector. If not all, substantial percentage of these industries are located in semi-urban areas which used to be rural areas before the development of these industries there.

Industrialising rural India

Industrialising rural India gained ground even before independence. Mahatma Gandhi thought that the decline of village crafts had helped to impoverish the village. In a revealing passage he said : "Our villages are on the verge of destruction owing to the disappearance of village industries. They can be revivified *only* by a revival of village industries".

This traditionalist ideology championed by the father of the nation had some essential elements. In the first place it asserted the paramount importance of defending and protecting the village crafts against further encroachment from modern industry, whether foreign or domestic, so that they might grow and develop. This in turn implied that individual villages should strive to attain greater, though not necessarily complete self-sufficiency as should the economy as a whole the important strand of thought woven into the traditionalist ideology is the concept of the moral superiority of self-employment and independent work to wage employment. Even in independent India this feature of Gandhi's ideology—his glorification of self-employment—has been expoused by almost everybody. In the words of the important Karve Committee Report : "The principle of self-employment is atleast as important to a successful democracy as that of self-government".

This was reflected in the report of the Evaluation Committee of the Khadi and Village Industries Commission also : "If employment is to fulfill the purpose for which it is sought, namely to provide opportunities for the full development of the worker, it must be as far as possible self-employment. The worker should be his own master either as an independent artisan (family) or as a member of a self-governing cooperative".

Approach to planning in India has not been on the lines of the traditionalist's thinking. In the initial stages, industrialisation derive (second objective of our planned development) has to be focused on production for export and import substitution. Architect of modern industrial India, Pt. Jawahar Lal Nehru held this view even before Independence : "In spite of all these present day advantages of the *Khadi* movement in India it seems to me after all a transitional affair. It may continue later on as an auxiliary movement easing the change-over to a higher economy. But the main drive in future will have to be a complete overhauling of the agrarian system and the growth of industry".

This is probably how the planners still think as Prof. Mahalanobis was thinking—"In view of the meagreness of capital resources there is no possibility in the short run, for creating much employment through the factory industries . . . . Now consider the household or cottage industries. They require very little capital. About six or seven hundred rupees would get an artisan family started. With any given investment employment possibilities would be ten or fifteen or even twenty times greater in comparison with corresponding factory industries".

Approach in Plans

The approach to the development of this sector has undergone some modification from plan to plan. In the First plan, the development of cottage and village industries was treated as a conjunct to the development of agriculture. The basic idea was that with the development of this sector excessive pressure on agriculture which had proved harmful for decades could be considerably reduced. The emphasis was on maximum utilisation of idle time during off-season for the agriculturists.

In the Second Plan, however, an independent position was carved out for the development of this sector. The primary objectives during this period were to extend work opportunities, raise progressively the standard of living of the artisans and bring about a more balanced and integrated rural economy. It was visualised that this sector, by its contribution to the production of consumer goods, would be able to reduce the inflationary pressure caused by investment of a higher order on heavy industries. Cottage and village industries were expected to meet the growing requirements of commodities of common demand. Karve Committee also envisaged a regular programme for transition to higher technology.

Role of cottage and small scale industries has been briefly summarised in the industrial policy resolution of 1956 adopted almost at the same time when the second five year plan was started. It states :

> "They provide immediate large scale employment; they offer a method of ensuring more equitable distribution of the national income and they facilitate an effective mobilisation of resources of capital and scale which might otherwise remain unutilised. Some of the problems that unplanned urbanisation tends to create will be avoided by the establishment of small centres of industrial production all over the country."

In the Third Plan, the concept of rural industrialisation was again spelt out. More significance was attached to positive forms of assistance such as improvement of skills, supply of technical guidance, better equipments and liberalised credit. It highlighted the need to improve productivity of the tools and equipments on the one hand and of the artisans of the other.

The Fifth Plan approach was on reaching as large a proportion of traditional artisans as possible who belong mostly to socially backward and economically vulnerable sections of the community and ensure them continued and fuller employment in their present occupations with a view to preventing their displacement from the existing crafts. The objective-frame for the development of these industries had two strands—(i) providing fuller employment to the existing artisans; and (ii) creating new employment opportunities in rural and semi-urban areas close to agriculture and rural life, in order to alleviate poverty, underemployment and unemployment.

Development strategy for cottage and small scale industries in the draft Five Year Plan (1978-83) was that "household and small-scale industries producing consumer goods for mass consumption hold out the greatest potential for employment...... ...The planning strategy would aim at protection of the existing livelihood of rural artisans and a substantial increase in the employment content of the rural industrial sector. It would seek to improve the quality of production, increase productivity, reduce costs and expand the market." Thrust of the strategy was "whatever can be produced efficiently by decentralised industry should be so produced."

Broadly the policies for the development of rural industries (traditional as well as modern) has been of two types. One consists of various measures taken to protect village crafts from competition from modern industry. Channelling industrialisation efforts in such a way that there are little or no backwash effects on the workers in rural cottage industry. In addition, institution of various measures limiting the production of competiting industries or raising their costs. This has been combined with direct subsidies to cottage industry in one form or another Example of this policy is the reservation of production sphere for handloom sector, financial assistance including subsidies to khadi and village industries. The other type of policies adopted have sought to increase the productivity, and thus competitive strength, of village craftsmen by offering them various services, by providing them with improved tools and simple machines and by organising them into cooperatives or taking other steps to improve marketing of rural industrial products. This has been the case for almost all sorts of rural industries.

Institutional Support

Rural industries needed special institutional support. For this purpose during early 1950s, the Government constituted six specialised boards entrusted with the responsibility of initiating development strategy in their particular sector. These specialised boards were the All India Handloom Board, the All India Handicrafts Board, the Khadi and Village Industries Board, the Silk Board, the Coir Board and the Small Industries Development Board. The Khadi and Village Industries Board was later upgraded into a commission and the scope of its activities was considerably expanded. In 1954, the Small-scale Industries Development Organisation (SIDO) was also set up in the Ministry of Commerce for providing comprehensive institutional support for technological and general development of small industries.

But there had been no proper coordination upto 1977-78 between the activities of these institutions particularly at the State and district levels and below. On 1st May, 1978, District Industries Centres institution was launched in the country to look at the problem of rural industrialisation in the district in a composite manner. Till then, this subject had been fragmented in a number of departments, and in most States, the District Industries Officer was a low level functionary who had hardly the capacity or the ability to plan industrialisation of the district in a systematic manner. Many of the Central and State level organisations had their own functionaries working at the regional and in some cases at the district levels and they intended to operate individually with no contacts with each other. It was, therefore, considered necessary to weave all the Government functionaries in a single institutional frame so that the District Industries Centre can act as a focal point for the entire industrial growth of the district. The DIC was supposed to provide all the services and support to the decentralised industries sector under a single roof at pre-investment, investment and post-investment stages. The main thrust of this institution programme has been on development of such industrial units in rural areas and small town of the country which create larger employment opportunies in these areas.

Plan Allocations

It is often criticised that though the rural industries have favourable capital employment and capital output ratio and despite the loud pronouncements made in every plan document, about their role for generation of employment and production of consumer goods, village and small industries sector as a whole has been given low priority in public sector allocations. Except in the Second Five Year Plan, when it was given a pride place to provide a cushion of consumer goods for the income generation in the capital goods sector, it has not got what was due to it. The allocation moved around two per cent of the total public sector allocation in all the plans as is evident from the table below:

Table-2 Plan Allocation for Village and Small Industries – Planwise

Plan period	Actual Expenditure / Plan allocation for VSI (Rs. crores)	Percentage to total plan outlay
First Plan (1951—56)	42.0	2.1
Second Plan (1956—61)	187.0	4.0
Third Plan (1961—66)	240.8	2.8
Annual Plan (1966—69)	126.1	1.9
Fourth Plan (1969—74)	242.6	1.5
Fifth Plan (1974—79)	592.6	1.5
1979-80	255.7	2.1

Source: Economic Survey, 1982-83, pp. 112-113.

Progress in rural industrialisation

Contribution of the different rural industry sectors to the realisation of objectives has varied over the last 30 years, according to changes in their structure and assistance made available to them. It is discussed in terms of output and employment generation as well as export earnings, made for decentralised industrial sector.

Handloom Sector

Handloom weaving is the cottage industry in the best sense of the term. This industry occupies a place of prominence in the country's economy by virtue of being the largest cottage industry, providing livelihood to about 6 million persons in rural areas and meeting nearly one-third of the country's cloth requirements. A large number of handloom weavers are women, concentrated primarily in the North Eastern Region where weaving is practised as a domestic craft. Almost all silk fabrics of the country are woven on handlooms. Handlooms provide employment to the largest number of people, next only to agriculture and hence its economic impact on rural employment and income. In view of its importance for the country's rural economy as well as its much disadvantageous position in competition with mill-made cloth, the handloom industry has been engaging the attention of the government since long.

Central Government reserved certain varieties of cloth—dhoties of certain width and borders, sarees, lungies, etc. for handloom sector and prohibited cotton mill industry from producing these varieties. Five Year Plans provided for greater production facilities to handloom cooperatives like credit for working capital from the State cooperative banks, supply of yarn of the required counts and other essential raw materials at reasonable rates, skill development through training of weavers in improved equipment and appliances and common service facilities centres for quality improvement. Plans emphasised both restrictive and positive elements of production programmes for this industry. On the one hand, there has been enforcement of effective restrictions on production of specified varieties of cloth reserved exclusively for handloom sector; on the other, this sector throughout has been targetted to concentrate on production of those varieties of cloth which could provide higher earnings and were required for export.

On the recommendations of the Sivaraman Committee on Handlooms, lakhs of weavers have been brought within the cooperative fold. The number of cooperatives stood at 14 lakh looms in 1980-81. Technical support to the handloom development programme is being provided by a chain of 23 weaver service centres and two Indian Institutes of Handloom Technology.

Following several facilities and promotional measures provided by the Central and the State governments, production of handloom industry rose from a very low level of 700-800 million yards in 1950-51 to about 3000 million metres in 1979-80 worth Rs. 174 crores providing employment to 61.5 lakh persons.

Export in the handloom sector began in the 1960's in traditional items to markets in Burma, Sri Lanka, West Africa, Mauritius, etc. mainly to meet the needs of Indian settlers. The exports consisted of items like lungies and sarongs. However, product-country diversification started taking place from the mid-seventies. Exports of handloom goods rose from Rs. 11.43 crores in 1966-67 to Rs. 261 crores in 1979-80, an increase of over twentyfour times. USA, ECM Countries, Nordic countries, Australia and Canada are some of the important markets for our ready-made garments.

Khadi and Village Industries

Integrated rural development lays stress on growth of employment through resource utilisation designed to convert sunlight, soil, water, minerals, plants, animals and other resources into wealth. India is rich in animal wealth. Our water resources are vast and varied. India being a tropical country can harness solar energy for industrial and domestic purposes. The organic wastes can be converted into energy and rich manure. The various types of fibrous materials which are available in abundance can be utilised to produce different types of fancy and utility articles. All these activities are close to agriculture and rural life. There exists a vast field in the countryside for processing of agricultural produce by recourse to appropriate technology and management. A definite shift from capital intensive technology to employment-oriented low energy technology, conducive to decentralised operations in the rural areas is essential.

Khadi and Village Industries Commission (KVIC) is one of the main instruments for rural industrialisation. KVIC, set up under an Act of Parliament in the year 1957, is responsible for planning, organising and implementing programmes for the development of khadi and 25 specified village industries. Its programme are implemented through 25 State KVI Boards, about 800 registered institutions and 29,000 cooperatives. The activities of the Commission, at the moment, cover about a lakh of villages in the country.

Khadi has been defined as "cloth woven in India on handlooms from yarn spun by hands from cotton, wool, silk or a mixture of these fibres". Village Industries under KVIC can be classified as (i) agro-based industries, (ii) agricultural input industries, (iii) forest-based industries, (iv) other consumer goods indsutries. The industries like village oil, village leather, carpentry and black-smithy, fibre, lime manufacturing, hand-made paper, village pottery, neo-soap making, match manufacturing, palm fibre articles manufacture, leaf mat making are broadly full time in nature i.e. the artisans in these industries get work opportunities for atleast 273 days in a year and 8 hours work in a day. The industries like processing of cane gur and khandsari, neera collection, palm gur making, seed collection activity under neo-soap are primarily seasonal in character. However, they provide employment to workers on full time basis during the season.

Khadi and Village Industries Commission provides financial assistance for capital expenditure (land, building, workshed, godown and equipment, tools machinery, etc), working capital (for production and for sales), management grant on a tapering basis for new institutions, technical assistance grant to units where there is need for initial technical service, promotional grant in the shape of sales rebate, equipment grant, etc. For the hill, border, tribal and backward areas, KVIC's pattern of assistance possesses a liberal element of grant compared to other areas.

Achievements of the KVIC can be reviewed in the background of the policies laid down in the Plans. Around 1951, the production of khadi was about a million sq. metres. There were about 3 lakh spinners and weavers in khadi. In 1955-56, the production in khadi and village industries had risen to about Rs. 16.5 crores. There were 242 registered institutions and 60 cooperative societies working in the field. There were 69,000 persons employed on full time basis and 8,95,000 persons on part time basis. Earnings of these persons stood at Rs. 6.9 crores. The establishment of the Commission in 1957 gave a stimulus to the development of these industries. In 25 years, the achievements in Khadi and village industries reached some impressive heights. The following table shows selected indicators of progress:

Table -3 Khadi & Village Industries—Progress

	1955-56	1973-74	1979-80
1. *Organisations* (*Nos.*) :			
(i) State Boards	2	20	25
(ii) Institutions . .	242	681	800
(iii) Co-operatives .	60	23,715	28,000
2. *Production* (*Rs. crores*) :			
(i) Khadi . . .	5.6	32.7	92.05
(ii) Village Industries	10.9	122.4	348.00
3. *Employment* (*Lakh persons*) :			
(i) Full time	0.69	2.39	
(ii) Part time . .	8.95	15.73	27.33
4. *Wages/Earnings* (*Rs. crores*) : Khadi & Village Industries	6.9	39.2	122.09

Source: KVIC—An Economic & Statistical Profile & Annual Report of the Ministry of Rural Reconstruction (1980-81).

This shows that over the period production has increased about 27 times and employment has increased only 3 times. Earnings of khadi & village industry workers increased by 18 times. These figures reveal that employment has not kept pace with growth in output and earnings showing thereby that gains from these KVI programmes are cornered by not increasing number of workers or artisans but limited number of influential persons who have created family cooperatives or set up small scale units assembling sophisticated items like washing machines, desert coolers, etc. under blacksmithy and other capital intensive trades for which Commission's assistance runs into lakhs.

Handicrafts

Handicrafts constitute an important segment of the decentralised sector of our economy and provide employment to nearly two million artisans, scattered all over the country specially in rural and semi-urban areas. A large number of handicraft artisans belong to weaker sections including scheduled castes and scheduled tribes. Other backward classes and women also constitute a sizeable portion of the work force. Handicrafts comprise a wide range of artistic products such as hand knotted carpets, art metalwares, hand printed textiles, woodwares, embroidered goods, cane and bamboo articles, dolls and toys, ivory products, etc.

The two rural industries development programmes, handicrafts and small industries have grown together as twins in the past 30 years. They took birth about the same time. While an international perspective planning team sponsored by the government for drawing up a programme for small industries was giving final touches to its blue prints in 1954, a team headed by Prof. Raj Krishna was finalising a comprehensive plan for handicrafts development.

Remarkable progress in the development of handicrafts over the period is the change in the mood of the craftsmen. At the time the Raj Krishna team was touring the country and interviewing craftsmen, it noticed a widespread feeling of gloom. Most craftsmen were getting work for only about four months in a year. With the collapse of the princely order, the colonial regime and the landed aristocracy since 1947, the handicrafts workers had lost the wealthy segment of their patrons. The situation has since then dramatically changed. The craftsmen today are able to get fuller employment and higher income, thanks to the heart-warming response of the people at home and abroad to Indian craftsmanship. Of course, this is in no small measure due to the vigorous marketing support organised by the All India Handicrafts Board.

Promotional measures taken by the All India Handicrafts Board for development of handicrafts include provision of technical guidance to artisans, arrangement of their training facilities, demonstration oriented towards improving the quality of products and productivities of the craftsmen, product diversification in different crafts, setting up of Central Crafts Museum at Delhi and as many as 250 emporia in the country for effective marketing and provision of improved tools and equipment to craftsmen.

Changes in employment and exports during the last two and a half decades provide a good measure of progress recorded by handicrafts. In 1953-54 about 6 lakh workers were engaged in handicrafts. In 1979-80, an estimated 21 lakhs were engaged in handicrafts. Handicrafts exports in 1953-54 were worth about Rs. 7 crores and had risen to about 1000 crores by 1979-80. Production was of the order of 2050 crores in the financial year 1979-80.

Coir Industry

The coir industry in India is mainly a cottage industry dispersed over the western coast of Kerala where natural retting facilities of coconut husks exist. It is fast developing in other coconut growing States like Tamil Nadu, Karnataka and Andhra Paradesh, etc. more particularly in the extraction of brown fibre directly from raw husks by mechanised means.

The First Plan drew attention to the depressed state of the industry in Travancore-Cochin (now Kerala) and recommended to the State Government a programme for its reorganisation on cooperative lines. As a result a number of husk societies, coir cooperative societies and also central marketing societies were organised in the State to eliminate the hold of middlemen on the industry. Training was also imparted to the different processes of coir manufacturing. Coir Board set up in July, 1954 took up various promotional measures relating to cooperativisation and mechanisation. The Board set up Central Coir Research Industitute in 1959 for research on retted fibre and products. First mechanised unit with five powerlooms was set up at Kalavoor in 1968 by the Coir Board. It was followed by two or three powerloom units in private sector. The National Coir Training and Design Centre of the Board continues imparting training in coir extraction and processing to candidates all over the country.

Production of coir and coir products during the year 1979-80 was of the order of Rs. 86 crores approximately out of which exports were of the order of Rs. 30 crores. The coir industry (white fibre sector) provided employment to 5.6 lakh workers in 1979-80. The high percentage of unemployment in Kerala combined with the low capital investment needed for the coir industry tend to keep the industry overcrowded, with the result that coir workers are underemployed.

Sericulture

India ranks third among the silk producing countries in the world after China and Japan. Recognising the significant role of the sericulture industry in creating rural employment and promoting exports, Government of India has been extending support to State Governments for development of this industry. Of late, mulberry sericulture has come to be practised in Tamil Nadu, Andhra Pradesh, U.P., Madhya Pradesh, Orissa and the North Eastern Region in addition to the traditional areas of Karnataka, West Bengal, and J&K. Programmes for balanced growth of sericulture industry covering both mulberry and non-mulberry sectors have been initiated.

For the development of sericulture, Central Silk Board was set up in 1949. The Board's functions relate to research and development in the field of sericulture covering all varieties of silk namely mulberry, tusser, muga, and eri. The Board also undertakes the implementation of certain central schemes of national importance dealing with research, training, extension, supply of basic seeds and price stabilisation for silk, cocoons and raw silk.

The Board plays an important role in the supply of improved mulberry cuttings and production and supply of disease-free commercial layings to rearers, particularly those in the non-traditional areas. The Board also provides research and development support for the World Bank aided Karnataka Sericulture Project. Under this programme research and training facilities are being strengthened considerably at CSRTI, Mysore. The project seeks to enhance infrastructural facilities for farmers and reelers and increase production of bivoltine cocoons. It also covers modernisation and expansion of Mysore silk-weaving factory and Chennapatna spun silk mills.

During 1979-80, production of silk was of Rs. 131 crores. Exports of silk products have shown an encouraging trend over the last few years. They have gone up from Rs. 12.66 crores in 1974-75 to 49.0 crores in 1979-80. Sericulture sector provided employment to 16 lakh persons in the year 1979-80.

(Continued in the next issue)

Threefold increase in cooperative credit in a decade

AN ANALYSIS of the credit flow through cooperatives for agricultural and allied activities during the last decade or so shows that there is a steady increase in the credit flow. The amount of money so advanced has increased more than three-fold between 1971 and 1981.

In 1981-82 the aggregate loans advanced by the cooperatives for agricultural and allied activities amounted to Rs. 2305 crores as against Rs. 760 crores during 1971-72. The total amount advanced in 1979-80 was Rs. 1936 crores and increased to Rs. 2022 crores in 1980-81.

During the current cooperative year 1982-83, the trend of increasing flow of credit by cooperatives is continuing. The target for total lendings by cooperatives during 1982-83 has been fixed at Rs. 2765 crores. Against this, more than Rs. 1561 crores had been disbursed in the first half of the year. This is 113 per cent of half year's proportionate target and indicates that the target of 1982-83 will be achieved which would represent a sizeable increase over the lendings in 1981-82.

The Sixth Plan objective that at least 50 per cent of institutional agricultural credit should go in favour of weaker sections of the society would also become feasible of achievement. About 40 per cent of the total loans issued by cooperatives is estimated to have gone to the weaker sections of the society. Guidelines have been issued to cooperatives to finance oral lessees and share croppers even if they had no record of rights over the lands they cultivate. Share of small farmers in the total refinance provided by NABARD during 1981-82 increased to about 65 per cent from 60 per cent in the previous year. ☐

India and the Asian Development Bank

Union Finance Minister, Shri Pranab Mukherjee recently lea a five-member delegation to the 16th annual meeting of the Asian Development Bank held in Manila. One of the issues discussed included India's request for a two billion dollar loan from the Bank. India is the third largest donor to the ADB after the USA and Japan and has abstained from borrowing from it since the Bank was founded in 1966. The article dwells at length on the role of India in the operations of the ADB.

INDIA is a founder member of the ADB which was established in December, 1966 at Manila. Ever since the Bank began its operations, the Government of India had voluntarily refrained from exercing its right to borrow from ADB. The main reason for the Government's policy was that ADB was an institution which needed to establish itself in the financial markets of the world before taking on the requirements of large borrowers. Also India's requirements were being met more or less adequately from the World Bank and bilateral aid resources. The situation changed drastically in the 1980s. Aid climate became uncertain and future prospects were not at all encouraging. The markets in industrialised world have ceased to grow and the protectionism is increasing. These developments imposed a heavy burden on external adjustments on the Indian economy. Moreover, these adjustments have to be achieved without unduly disrupting development efforts of the country. In these circumstances, the Government of India decided to explore avenues for additional external development financing including the Asian Development Bank.

Accordingly, in April 1981, India informed the management of ADB of its intention to borrow from the ordinary capital resources of the Bank beginning from third general capital increase. At the same time, the Government reaffirmed its decision not to lay any claim on the concessional resources available through the medium of the Asian Development fund. At that time, the general capital increase being contemplated was anticipated to be at the rate of 125 per cent, i.e. each member country would contribute 125 per cent of the shares held by them. Under these circumstances, the total lending from the ordinary capital resources of the Bank during the 5-year period was calculated to be $ 11 34 billion. If the normal economic criterion was to be applied to India, we would have been eligible to lay claims on significant proportion of the total lending. However, India indicated that it would exercise restraint and will ask for a 2 billion dollar loan over the 5-year period.

The third general capital increase of only 105 per cent has just been finalised, the level having been reduced primarily due to opposition from the States. At this reduced level the total ordinary capital resource, lending will be dollar 9.55 billion.

India's claim to borrow from the Bank has been recognised and accepted by the management of the Bank, though, they have expressed some misgivings about the quantum of funds that would be available in the context of reduced general capital increase. India, on its part, is willing to discuss the matter further with the ADB.

Structure

The ADB started operation in December 1966 and has a total membership of 45, of which 31 are regional and 14 non-regional members. The last member admitted to the Bank was Bhutan in 1982. Of the 31 regional members, Australia, Japan and New Zealand are developed countries while the remaining are developing countries. Iran and Outer Mangolia, although eligible to become regional members, have chosen not to join the Bank. The people's Republic of Korea and the People's Republic of China are not members but China has now applied for membership. All major industrial countries of Asia, West Europe and North America are members.

The management of ADB is similar to that of the World Bank, IDB, etc. and consists of a Board of Governors on which each member is represented by one nominee; a 12-member Board of Directors; a president who is elected by Board of Governors for a period of 5 years and 3 Vice-Presidents who are nominated by the President.

Shri A. T. Bambawala from India is one of the Vice-Presidents. Like other international fiancial institutions, ADB follows a system of weighted voting related to the size of subscriptions; 20 per cent of the total votes (called the basic votes) is distributed equally among members, while the remainder is distributed in proportion to the capital subscription. As on December 31, 1982 regional members held 63.764 per cent of the total votes.

Capital Stock

Originally, ADB's authorised capital was fixed at $ 1,000 million, but in November, 1966 the Board of Governors agreed to increase the total authorised capital to $ 1,100 million. Indian's subscription was $ 93 million, half of which was callable and the other half paid-in.

In November, 1971 the authorised capital stock of the Bank was increased by 150 per cent raising total subscriptions to $ 2750 million. India's subscriptions increased to $ 232.5 million. Of the increased subscriptions only 20 per cent was paid-in and remaining 80 per cent 'callable'.

The second general increase of 135 per cent in the authorised capital stock of the Bank was approved in October 1976. India's subscribed capital rose to $ 546.4 million. Of this increase, 90 per cent was callable and only 10 per cent was paid-in.

The Bank's authorised capital stock as on 31-12-1982 was $ 7965 million of which the subscribed portion amounted to $ 7899 million, of this regional members count for $ 4935 million.

The third general capital increase of 105 per cent, decided recently, will raise bank's authorised capital stock to $ 16328 million. India with a subscribed capital of $ 602.7 million (7.631 per cent share) is next only to Japan and United States.

The Bank's capital stock has been valued for purposes of its financial statements on the basis of SDR 10,000 per share. The SDR is expressed in the Bank's financial statements in current United States dollars as the equivalent of $ 1.10311 per SDR, the rate computed by IMF as on December 31, 1982.

Asian Development Fund

ADB established an omnibus special fund in June 1974 with an amount exceeding $ 225 million. This fund is designed to provide a mechanism for the systematic mobilisation of resources for the Bank's concessional lending operations, and for the efficient administration of these resources. Contributions are to be united for procurement in all developing member countries and in all contributor countries. They will be drawn on a pro-rata basis, to finance loans on concessional terms for the economic and social development of the Bank's developing member countries.

The total resources for concessional lending stood at $ 3535.6 million as on December 31, 1982. During 1982, the Bank provided a total loans of $ 546 million for 25 projects in 8 developing member countries.

Indian Procurement

India attaches considerable importance to the obtaining of orders for goods and services under ADB contracts. The ADB's procurement activities were not significant until the 70s. The data given below indicates our cumulative share at the end of each year.

(Cumulative figure in US $ million)

Period ending	Goods	Rank	Consulting Services	Rank
31-12-1978 . .	66.275	8	4.550	9
31-12-1979 . .	82.676	8	13.341	6
31-12-1980 . .	96.625	8	13.673	7
31-12-1981 . .	108.247	7	14.913	7
31-12-1982 . .	173.604	6	14.970	6

During 1982, India won orders for about $ 65.3 million. In terms of percentage, our share in the Bank's total procurement upto the end of 1982 is 3.30 per cent vis-a-vis 2.55 per cent at the end of 1981.

Lending Operations

In addition to specific project loans, ADB can extend global loans to national development banks for relending to small and medium term enterprises whose financing requirements are not large enough to warrant a direct loan from the Bank.

Loans out of ordinary capital resources are made on more or less commercial terms as far as interest is concerned. Amortisation is variable, the average being around 20 years. Repayment is in the currencies in which loans were disbursed.

The lending rate of loans from the ordinary capital resources as in January 1983, is 11.00 per cent.

By the end of 1982, the Bank's cumulative lending has reached $ 11501.5 million for 565 projects in 26 DMCs. Of these loans totalling $ 7983.9 million were from ordinary resources and $ 3517.6 million from special funds. □

(Continued from page 7)

table below indicates that cross-over inviability is likely to take place :

Year	Price per kilometre of fibre optic cable	International Price per kilometre of unfilled copper wire	Indian Price per kilometre of unfilled copper
1980. . . .	$8000	$7000	$14000
1982. . . .	$5400	$7700	$15000
1984. . . .	$3600	$8400	$18000
1990. . . .	$1600	$11400	$25000

It is apparent from the above that for India, the cross over will take place well before that for developed and copper mining countries.

The Proposed Project

There is a computer communication project of national importance assuring reliable air defence in the border area. This project is composed of a larger number of sub-projects integrated into a total mission. In the same structure, we should initiate a well funded project for implementing the communication network which will employ all the technologies of the 90s. Starting from now, a ten-year project should be commissioned so that when the pilot network is completed, by 1990, we would be ready with technologies and pilot-scale experience for the network of the 90s. The pilot project should be so designed as to enable us to widen the network on a nation-wide scale utilising those technologies which have proved their viability under Indian conditions. Such a project can be undertaken as a joint effort of the Department of Electronics, Ministry of Communications and the Space Commission.

Unless we take bold and self-reliant steps, for establishing large scale mission-oriented projects' of this nature in the communications field, we will not get out of the Strawger & Cross-bar age of communication even by the turn of the centuary. There is need to pool our intellectual resources to evolve a mission-oriented project of this nature to help launch the country into the age of public digital networks, geo-stationery platforms, communication and tele-conferencing. □

Film as a medium of communication : Its potential and its achievement

Film is the most effective and reliable of all the communication media since it involves both language and picture. It can be used to educate, to entertain and to persuade.

M. Subbarayulu Choudhary

AS FACE-TO-FACE discussion is not possible always, the necessity of 'mass communication' will arise and have incalculable impact on the modern world. Mass communication is the delivery of information, ideas and entertainment to thousands of millions of people simultaneously by the use of communication media. The communication media includes radio, television, film, press, publications and advertising etc. Among the above media film has got a notable place in the modern communication. This paper reveals the study of film as a medium of communication.

Communication process

Before going to study about the film as a medium of communication one is interested to know what is meant by communication process. Communication is the process of transmitting information from one person to another. Mass communication encodes messages to maintain our relations with other societies in the world, and messages to transmit our culture to its new members ! Wilber Schramm in his article. "How communication works" said that the communications system would be as follows :—

Source→Encoder→Signal→Decoder→
→Destination

He also added that 'source' and 'encoder' is one person, 'decoder' and 'destination' is another person, and 'signal' is the language and you are taking about human communication. This communication system can be compared with film, a media, as source and encoder is the producer of films (either government or private persons), decoder and destination is the audience, and signal is the language and visibleness of film (communication media).

Film as a medium of communication

Film is the most effective and reliable of all the communication media since it involves both language and picture. If the language is not clear the picture will generate and communicate message. It was noted that the American films in foreign markets demonstrate the primary role by the film's visual elements, and the lesser importance is given to the language as a communication device. The primary concern is with film as communication, not to supplant language but to help develop language, perception, fact-finding, and expression by means of word and picture together. So both language and picture are inevitable factors in the film media. This media is more effective in urban areas as well as in rural areas and having good impact on both the educated and uneducated people. People of all ages are continuously having to try to make sense of word and image statements made through this media which aim to educate, entertain, edify, convert or simplify to sell something of which we may have little need. It is an international media which is used to disseminate the current national and international events. To achieve this, the Films Division in our country has exchange arrangements with 18 foreign films organisations for free exchange of important international events. Advertising films, Institutional films are also used by the organisations to enhance their publicity and good will.

Achievement

In India the feature films are being produced since 1912-13. In our country so far 15,060 feature films have been produced, covering more than 20 languages. The production of feature films in the year 1951 was 219 which reached to 303 in the year 1961. In the year 1971 the figure was 433 which increased to 737 in the year 1981. On an average, the films produced in Hindi are more than those produced in other languages in the country. But since 1979, the number of films in Tamil, Telugu and Malayalam has increased. The feature films inform and persuade as well as entertain the audience.

Important newsworthy events within and outside India are communicated through weekly national newsreels. For producing and releasing the newsreels, Government of India established a separate division called 'Films Division' in the year 1948. At the beginning it produced only 33 documentary films, 12 compilations and 52 newsreels during a year. Currently it is producing 140 short films (including four cartoon films), 52 national newsreels and 52 regional newsreels. Most of these films are produced in English and 15 other regional languages. The division also releases the newsreels regionwise i.e., one newsreel per region in a month. With a view to communicate the national events regularly the films division has made certain obligations on the cinema houses in India that every cinema house should exhibit 609 metres of approved film supplied by the Division. The films are also telecast by the Televisions in India on royalty as well as rental basis.

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Windmill : The appropriate technology for rural development in India

The windmill projects are capable of generating some social benefits. This technology being one of the non-conventional methods of harnessing wind energy helps the economy to tide over the growing energy crisis because this can save conventional energy sources like petroleum and coal.

Dr. B. Rath

THE FATHER OF THE NATION, Mahatma Gandhi, often remarked that the village represents the real India and that its social and economic development holds the key to national prosperity and happiness. Thus, with the advent of planning in India, many new schemes like community development programmes, panchayat raj systems, etc. have been introduced to bring changes in the grass-root levels of our economy. Further, during the various five-year plans many new monetary and fiscal measures have been undertaken by the Governments for the development of our rural areas. But unfortunately, most of these schemes and measures have not been able to benefit the lower sections of the rural population. Many research studies, carried out to evaluate the performances of all these schemes and measures, have pointed out that the uplift of the rural sector of our country basically depends on the development of our agriculture because it is the only "bargain sector" which can produce a physical surplus as well as additional employment opportunities for the rural masses. However, in order to bring any transformation in our agriculture, it is well recognised that we must modernise this key sector, which in its turn depends on development of irrigation facilities. So far, the major medium and minor irrigation facilities developed in the public sector, and the development of private sector irrigation facilities like diesel and electricity-driven pumpsets, and other conventional methods of irrigation have failed to bring relief for our small and marginal farmers. Under these situations, the Organisation of the Rural Poor, a voluntary social service organisation, in collaboration with the Tool Foundation of Holland, has initiated the windmill projects in the Ghazipur district of U.P. for improving the conditions of the small and marginal farmers. It is expected that this experiment would enable the small and marginal farmers in modernising their agriculture by adoption of windmill technology as an alternative irrigation device. In this paper, we have attempted to evaluate the multifarious impacts of such projects and further to examine whether this device could provide an appropriate technology for our rural development or not.

Basis of our Analysis

Our observations are based on the primary data, collected by us, from the farmers of Rajadi, Murawal, Fatullapur, Saheree, Tiranpur, Bahadipur, Pathanpur and A. Salamatpur Villages of the Ghazipur district during our field-trip from October 1 to 4, 1981. The method of data collection was primary survey method. In this survey we not only interviewed the users of the windmill projects but also the non-users of the user-villages as well as of the neighbouring villages. The basic purpose of our survey was to examine how-far the windmill projects have succeeded in bringing transformtion in the rural areas by ensuring the basic objectives of planning; viz. fulfilling the basic socio-economic needs by increasing production, increasing employment opportunities, achieving greater social justice through more equitable distribution of income and wealth within different groups and regions.

A Ray of Hope

From the point of view of the marginal and small farmers, who constitute nearly 85 per cent of the rural population of Ghazipur district, the windmill project has been able to raise their hopes for a better life in future. All the users of the project are quite happy with the results of this technology. The poor farmer, who was depressed two/three years back, has become so optimistic that now he is able to be ambitious in life. Many feel that this device is inescapable for there is no other water-lifting device which is so simple and less expensive as this. Furthermore, its superiority has been established because of the scarcity of power and diesel in the rural areas. When electricity is not there or diesel has gone out of the market, wind is available round the clock for the rescue of the poor farmers. This advantage is obviously over the high establishment cost or maintenance cost of other devices which are generally unbearable for the poor farmers. The capacity of the windmill projects being 3-5 acres and life-span being 15 years, this technology is really a boon for the small farmers.

Benefits derived by the farmers

No doubt, this technology has brought a number of benefits to the farmers such as maximisation of net gains, maximisation of employment opportunities, and maximisation of their social securities and status. The substantial net gains of the farmers have flown from the changing cropping intensities and changing cropping patterns : While the farmers were growing two crops per annum, with low yields, before the windmill project; now they are able to grow 3 to 4 crops per annum with higher yield rates. At least they can grow three crops, but with the introduction of new crop rotations they would be able to grow four crops successfully. In this direction, the extension activities of the TOOL-ORP Windmill Project, Kusumih Kalan, Ghazipur is commendable. The field staff of this organisation is in constant touch with the farmers. They induce the farmers to change the crop rotations in such a manner that the water requirements in winter, during which period the output of the windmill project is the lowest, should be minimum. In the following tables we have provided the cropping patterns before and after the windmill for marginal and small farmers.

TABLE 1

The Cropping Patterns before the windmill

Kharif	Rabi	Summer
Paddy	Wheat	
Jawar	Barley	
Sugarcane	Gram	
	Peas	
	Sugarcane	Sugarcane

Note that sugarcane was used to be grown in a very limited scale only for the domestic consumption of the farmers provided water was available during summer. However, it had poor yields and the farmers used to struggle to earn their subsistence. Since last decade some of our sample farmers used to buy water from the neighbouring farmers, who own diesel or electricity driven pump sets. But the water rates were very high, i.e. varying between Rs. 3.50 to Rs. 5 per hour for electricity driven pump sets and Rs. 7.50 to Rs. 10 for diesel driven pump sets.

TABLE 2

The New Cropping Patterns after Windmill

Kharif	Rabi-I	Rabi-II	Summer
(June-Sept.)	(Oct.-Dec.)	(Jan.-March)	(April-June)
Paddy	Potato	Wheat	Moong
Sugarcane	Tomato	Onion	Lady's finger
Maize	peas	Lenties	Lobia
Jowar (fodder)	Mustard	Gram	Fodder crops
Lady's finger	Berseem	Sugarcane+ gram	Sugarcane+ onion
Lobia			Paddy

Now after the introduction of the windmill, water for irrigation is available in selected months of the year depending on the wind velocity.

In order to make the best use of water, a changing cropping pattern is called for. To adjust to four crops pattern one has to bring adjustments in the crop rotations. Generally rice and wheat are the two main crops that are grown during the rainy and winter seasons respectively. However, an advancement of the sowing of paddy by one month i.e. from July to June, is possible due to availability of enough water through windmills in the month of June. The water is also sufficient even to do transplantation in July without any rainfall. Owing to these changed cropping pattern and the cropping intensities the farmers have been greatly benefited and have been able to maximise their net gains.

In addition to these net gains from crops, the farmers also derive certain other advantages from the windmill. Some of the additional benefits accrued to the farmers are :—

(a) *Fish Rearing*

Usually the windmill project is accompanied by a reservoir tank of 20 m × 10 m × 1.5 m. dimension. This pond can be ideally utilised for fish rearing and for the cultivation of blue-green algae which can be used as manure. On the basis of the information collected from the farmers we have estimated that the monetary gains from fish rearing would be enough for repaying the loan instalments from the bank.

(b) *Animal Rearing*

Since the farmers are able to grow adequate amount of fodder crops, now they are induced to rear more number of animals like cows, goats, sheep and buffalos. A valuable information that we have obtained from the farmers is that they are planning to rear these animals not for their domestic consumption but for their commercial utilisations. This is, no doubt, a healthy sign for the uplift of our weaker sections of the population.

(c) *Gains from selling water*

In the summer season when the water is scarce in the region, the windmill farmers have excess water. So during these months they are able to sell water to the neighbouring farmers. Usually this process of exchange involves a barter system, where these farmers get labours and sometimes foodgrains in return.

(d) *Employment Benefits*

I have calcuated the employment potentials of such windmill projects. The results are revealing because it has been able to generate round-the-year employment opportunities for the small farmers with a family size of 10—15 (of which 4-5 are working persons) having 2.5 to 4 acres of land-holding. Thus, this new technology have been able to eradicate the disguised unemployment that is widely prevalent in our rural areas. Since the PEO, Planning Commission, Government of India, has recently confirmed the well-known fact that the small and marginal farmers are attracted to seasonal works, the windmill has provided adequate employment opportunities for them so as to avoid the hardships of finding jobs in the slack seasons.

The Social Benefits

Moreover, the windmill projects are capable of generating some social benefits. This technique, being one of the non-conventional methods of harnessing wind energy helps the economy to tide over the growing energy crisis because this can save some conventional energy sources like petroleum products and coal. Furthermore, since this technology does not create noises and smokes, there will be no disturbances in the environmental settings, that are highly conducive for the development of human beings as well as of natural habitats. As these projects are provided to the small and marginal farmers of the backward areas, its development will also ensure social justice through equitable distribution of wealth and income within varying groups and regions. Thereby some social security is guaranteed to these small farmers.

The Bottlenecks

In spite of the best results of this technology, the sample farmers face some institutional bottlenecks. Of course, none of these bottlenecks are related with the technology as such. The major bottleneck is related to the availability of finances. The ambiguity arises because while the marginal and small farmers are entitled for 50 per cent subsidy, provided by the Government of U.P., they are not able to get loans from the commercial banks. As per the present norm of the RBI, the commercial banks are little hesitant to finance these project. The second problem arises from the inadequate information channel. At present, the information system is not well-equipped for diffusion of this new technology. Very often, wrong and misguided information is reaching the farmers, who in their turn are disheartned with the technology.

Spread of technology

On the basis of our field observations, we would like to conclude that the spread of this appropriate technology would accomplish the social goals of sufficient production, growth with social justice and full employment for the underemployed small and marginal farmers in our rural areas. Some of our sample farmers, who used to grow crops barely to maintain their family in the yester-years, are now hopeful of marketing their products. They have acquired enthusiasm and are planning to undertake many new activities. One such farmer even expressed before us that he is planning to plant papaya and banana trees around the water tank and he is also planning to sell a sizeable amount of his standing crops in the market. This was unbelievable for him even two years back.

Because of these significant contributions of the windmill projects, we would like to urge upon the Government to accord a top priority for the development of this windmill technology. Government should take adequate steps to eliminate the bottlenecks so that the marginal and small farmers would be greatly benefited from this appropriate technology. Further, the R & D activities to harness electricity from wind energy should be encouraged so as to tackle the growing energy crisis in the future years.

In many studies it is concluded that in Indian agriculture there is the absence of a firm technological base for improving its productivity and thereby the purchasing power of the rural community. Under these circumstances, we hope that this new technology can provide the missing base. Let us carry it further for the uplift of the weaker sections of our rural sector. □

(*Continued from page* 18)

Screening of films in other countries is important for communication. At present Indian films are exported to nearly 90 countries. Films Division has participated in 43 international film festivals and won several awards.

Potential

Film is a mass media of communication for education, entertainment and culture. Film reaction depends not only on the language and picture but also on the purpose of the film. Documentary films for National events like Family planning, Postal savings, Flood relief funds etc.. will create good impression on the audience. But in the case of political canvassing etc., this media may not have the good reaction in the voters as in the case of personal approach. The potentiality of the film will depend upon its reaction from the public. The government should make the arrangements so as the film should become close media of the masses. One of such arrangements is exhibition of documentaries at schools. colleges and technical institutions to communicate the educational matters. Films may also be exhibited in the villages and towns to educate. But the film may not retain its potential for a long time since recently the television has become a close competitor to the film and they are linked in their appeal and techniques. So there should be proper demarcation between the film and television so as to enhance the potentiality of the film.

To conclude, film is the close media of communication to most of the people since it attracts the large number of people by its impressive words and attractive pictures. The mass can recall the message even after the film is over. As this is the source of entertainment for most of the people, it is having good potential in the Sociey. □

Strategy for development of rural telecommunication

Individual possession of a telephone is not important in a rural area. It is the accessibility within easy physical distance and availability during day and night of a public telephone facility which is desirable.

ONE OF THE PRIMARY objectives of India's development Plans has been to improve the social and economic conditions of the rural and hitherto under developed areas. For achieving this goal, establishment of the necessary infrastructure like provision of roads, water supply, power, telecommunication services etc. becomes imperative. Good public telecommunications penetrating to the rural areas would generally facilitate the implementation of the various development schemes of the Government and other agencies involved in rural development. In formulating the 1980—85 Plan of the country nearly 43 per cent of the total outlay has been allotted for expenditure on agriculture, irrigation and power which are primarily to benefit the rural population. The Telecommunication Plan 1980—85 envisages an expenditure of more than one thousand crores for development of telecommunication services in rural, semi-urban, backward, hilly and tribal areas.

Goal of Perceived social equality

The development of rural telecommunication also becomes a goal of perceived social equality, as for ensuring equality among all regions and all social classes, there should be no privilaged access to telecommunication services. Individual possession of a telephone is not important in a rural area. It is the accessibility within easy physical distance and availability during day and night of a public telephone facility which is desirable.

Generally, telecommunication facility is provided in a rural area, initially, by installation of a Long Distance Public Telephone which is parented to a manual trunk board in a nearby township. As the demand develops for provision of telephones at premise of individual subscribers, extension from the Long Distance Public Telephone are given. However, as the demand grows further and provision of an exchange becomes viable, Long Distance Public Telephones are replaced by a small automatic exchange of 10 or 25 lines capacity with the transmission link of the Long Distance Public Telephone serving as its first junction to the manual trunk board. A Long Distance Public Telephone, the harbinger of the telecommunication facility in a village is provided as a social obligation by the Government. The policy in vogue for the last over four years envisages insatallation of a long distance public telephone regardless of loss at District Headquarter, Tehsils/Taluks, subdivisional headquarters, community development and extension services block headquarters, in village with 5000 population in ordinary areas, 2500 population in backward or hilly areas and in a cluster of villages within 10 Kms. radius with total population of 2500 in tribal areas and on varying amount of subsidies in villages with Police Stations, Project Sites, Pilgrim Centres and remote out of the way places. The population criterion was adopted as, generally the population size in a village grows to a level that can be sustained by its socio-economic activity and the policy was thus intended to serve relatively large sized villages where demand and usage of telephone service could also be expected to be higher. The policy has now been revised to provide for, additionally, long distance public telephones on spatial basis so that a long distance public telephone is available within 5 Kms. of most inhabitations.

Enter electronic age

Advantage has now been taken of the development in electronic and telecommunication technology. Multi-Access Rural Radio Concentrator systems are now being installed for providing long distance public telephones. These are highly reliable and best suited for application in rural areas where the traffic is low. During 1983, the World Telecommunication Year, about 500 such long distance public telephones will be installed all over the country. A beginning has already been made by commissioning of the Multi-Access Rural Radio Telephones Systems in Dhule, Maharashtra and in Mehsana, Gujarat.

The Telephone traffic in rural areas generally shows a high community of interest within a revenue district which in the National Telecommunication Switching Plan is mostly co-terminus with a secondary area. Manual trunk service is not so satisfactory as sometime due to congestion at the trunk board and subjective behaviour of the operator the calls are delayed. The P&T Department is planning to implement integrated digital telecommunication network in 18 selected districts of the country as a pilot scheme for implementation on a large scale in the country in future. The districts are : Krishna (Andhra Pradesh): Purnea-Katihar (Bihar); Nadiad and Mehsana (Gujarat); Belgaum (Karnataka); Bhopal-Sehore (MP); Alleppey (Kerala): Kolaba (Maharashtra); North Lakhimpur and Kohima-Mokokchung-Tuensang (N. E. Region); Sangrur (Punjab); Koraput (Orissa); Barmer (Rajasthan); South Arcot & Pondicherry (Tamilnadu): Agra and Mathura (Uttar Pradesh) and Jalpaiguri and Murshidabad (West Bengal).

Meeting the policy objectives

These districts represent the various demographic, topographic, socio-economic and telephone trunk con-

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ITI achieves all time high in production performance

The country's first public sector undertaking set up soon after Independence, Indian Telephone Industries has achieved an all time high in the production performance for the year 1982-83. Starting with just one factory at Bangalore, now ITI has expanded and has several units in different parts of the country. Scarcity of allocated funds for investment on telecommunications in the country has been a major cause for worry for the ITI's future.

THE YEAR 1982-83 was a normal successful year for Indian Telephone Industries Ltd. (ITI). Industrial relations were generally cordial and smooth. The power position was satisfactory except during the last three months, and production achievements substantial. The capital investment programmes of the Company for the year were also successfully implemented. A large new project for manufacture of Digital Eectronic Switching Equipment was sanctioned and the R&D activities of the Company marched ahead significantly. The year ended 31-3-1983 saw ITI reaching production levels at rated capacities in many of its units. The turnover of ITI for the year 1982-83 was about Rs. 180 crores and the estimated pre-tax profit Rs. 18.5 crores.

The production performance of ITI for the year 1982-83 was an all-time high. The Company's production units manufactured 1.87 lakh lines of Strowger equipment, 78,000 lines of Crossbar equipment, 5.8 lakh telephone instruments and Rs. 56.40 crores worth of Transmission equipment. All the Divisions of the Bangalore Complex performed at near rated capacity. Significant production achievements in increasing capacity utilisation and manufacture of equipment were reached both in Naini (Telephones and Transmission Divisions) and Rae Bareli (Crossbar and Strowger Divisions). The Srinagar Unit of the Company manufactured 63,000 telephones for the first time since its inception. The value of spares supplied to the Posts and Telegraphs Department was of the order of Rs. 12 crores as against Rs. 10 crores during the previous year.

Growth Plans and New Projects

Significant achievements in project implementation and production build-up were the hall-marks of the year in ITI's new project at Rae Bareli. While the Strowger Unit of ITI at Rae Bareli produced nearly 50 per cent of the ultimate capacity of the plant as against 30 per cent in 1981-82, the progress made in the implementation of the Crossbar project was very encouraging. While most of the factory buildings were completed, the Assembly Plants commenced production by the assembly and testing of Semi-Knocked Down (SKD) imports from Belgium and delivered 12,154 equivalent lines of equipment to the P & T during the year ahead of schedule. The other facilities of the Crossbar project have also progressed satisfactorily and we expect the Crossbar Unit to adhere to the programme of construction and achieving production capacities. This will be a very significant achievement in implementing a very large project in a backward area.

The first stage expansion of the Palghat Unit was completed during 1982-83 with the establishment of the air-conditioned assembly hanger and other state-of-the-art modern facilities for the assembly of Printed Cards and equipment as well as sophisticated testing equipment for the same. However, production in the Palghat Unit of new equipment is yet to commence as the product-lines in terms of Digital Trunk Automatic Exchange and PABXs are yet to be decided upon.

Research and Development

Research and Development activities of ITI progressed substantially during the year. While the existing computer-aided facilities, instrumentation, automatic test systems, etc. for communication equipment comparable to international and contemporary technology were implemented during the year, a new laboratory for Large Scale Integrated (LSI) Circuits and Very Large Scale Integrated (VLSI) Circuits development has been set up during the year. As many as 22 major projects were either productionised or cleared for production from the R&D during the year. Seventeen different systems are under field trial, eighteen projects are under development, and twelve new projects are being taken up. The objectives of constantly updating the existing technology in addition to ensuring quality standards of existing products were in the areas of Crossbar R&D.

Outlook for the Future

The Company has on hand new projects whose total investment value when completed would be of the order of Rs. 328 crores. On completion, these projects would make ITI one of the largest Public Enterprises in the country. The turnover from these factories at current prices would be of the order of Rs. 900 crores per annum. While ITI is confident that its projects will be brought on stream on time, a major cause for worry during the last few months has been the scarcity of allocated resources for investment on telecommunication in the country and its impact on ITI's future. Even in the year 1982-83, the P&T Department could not allocate sufficient funds for buying equipment from ITI. 1983-84 also is a difficult year when the allocations to the P&T for buying equipment from the ITI will not be sufficient to cover even half

(Continued on next page)

Wind swept wild blooms

SRIPADAM literally means the feet of Lakshmi, the Goddess of prosperity. In reality, it is a small village some 20 kms. away from Trivandrum.

The area was, some time back, unoccupied "porombokе" (government land) where marauding jackals and burrowing bandicoots held the sway.

Government made arrangements for this deserted land to be converted into a colony for people of the Scheduled Castes and Tribes. Eighty landless families were selected to form the nucleus of a settlement. Each family was allotted five to ten cents of land. House building assistance with a grant content of Rs. 2,500 was provided to each family.

Beehive

Within no time Sripadam became a beehive of activity. Brickwalled houses with tiled roofs, capable of withstanding the heaviest downpour sprang up everywhere. Wells were dug for drinking water and for irrigation.

After testing the soil, the Agricultural Department came forward with liberal schemes of assistance. Each family got at least eight coconut seedlings to plant on the land allotted to them. Pepper cutting were provided free of cost so that they could cultivate vineyards of black gold. Quality tapioca cuttings were also supplied as the soil was found suitable. Tapioca tubers, it may be borne in mind, form a substantial part of the poor man's diet in Kerala.

To encourage agriculture, tools like spades and pickaxes were supplied free along with fertilisers for the crops.

Lotus feet of Lakshmi

The windswept wild that was Sripadam is no more. Coconut palms, tall and graceful gently dance in the breeze. Pepper vines lend a spicy fragrance to the air. As long as tapioca grows and diascoreas mature, nobody need starve. And pepper and coconuts give them enough money to buy the little comforts of life.

Sripadam is now a full-fledged settlement of the people of Scheduled Castes and Tribes. But even the most discerning won't notice it. Its well dressed people, clean and industrious, its lush little plots full of healthy crops, Sripadam has certainly been blessed with the lotus feet of Lakshmi. ☐

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of the total supplies to be made by ITI. In 1984-85 and thereafter, a substantial amount of the total resources to the P&T for investment on the telecommunication facilities will have to be for payments to ITI. This matter has been taken up with the Government at the highest policy-making levels. It is hoped that ITI's growth will not be stunted or ITI's production capacity remain unutilised for want of funds and allocations to the P&T for expanding the telecommunications system for which there is a large demand and the level of satisfaction is very low. ☐

United We Stand

Divided We Fall

(Continued from page 22)

ditions etc. obtaining in the country. The Integrated Secondary Area Networks shall provide for subscriber trunk dialling for all calls within the district. The technology to be employed shall be the digital switching and digital transmission.

The requirement of equipment for expansion of telecommunication services in rural areas will be very large to meet the policy objectives. Naturally, our dependence on imports has to be minimised and eliminated altogether in the long run. Indigenous manufacturing capacity is being established in the Indian Telephone Industries and State Electronic Corporations to meet most of our future needs. In order to cut down the lead time in setting up of manufacture, import of know-how for manufacture is being considered.

With the new policy providing for the objectives of bringing a public telephone within 5 Kms. of most villages in the country, making the service more reliable by the use of modern technology and by providing integrated secondary area digital networks, India is making a great break-through in extension of reliance with regard to production of the same in the medium and long term. The manufacturing of telecommunication plant is also sought to be achieved simultaneously. ☐

One lakh houses for the poor in Kerala

Out of an estimated shortage of houses in the State of Kerala about 75 per cent is among the weaker sections of the society with less than Rs. 4200 annual income. The lion's share of this shortage is in the rural areas. The pioneering Land Reform measures implemented by the Government of Kerala have made most of the weaker sections owners of small bits of land. The hutment dwellers who were occupying small huts in the land owned by the landlords have been made owners of these bits of land. The other tenants have also been made land owners. Government have also distributed small bits of lands as house sites and slightly larger pieces as agricultural land. Some areas cleared out of the nationalised private forests are also distributed to landless agricultural labourers. These measures at Government level on the one hand and the break up of social institutions like the joint family on the other hand have resulted in making of several lakhs of people owner of small pieces of land. The weakest sections among them do not have a house worth its name. Most often they live in a hut, the walls and roofs of which are made of leaves of grass. In addition to the risk of fire and the perils of the heavy monsoon in the state these huts have also to be re-thatched every year involving considerable expense.

The housing schemes of the public agencies in the field have not benefitted the houseless weaker sections in the rural areas to any substantial degree. The Government of Kerala has in conjunction with Housing and Urban Development Corporation, New Delhi (HUDCO), Kerala State Housing Board, Kerala Cooperative Bank, the District Cooperative Banks and the Service Cooperative Societies at the village formulated a scheme to construct one lakh houses for these people to build a house on the land he is owning. The scheme is to build a house costing Rs. 4000 the break up of which is given below.

	Rs
Maximum estimated cost including price escalation	3600
Supervisory and administration charges . .	302
Interest during construction period . . .	98
Total . . . . .,	4000

The finance for this scheme is raised by way of loan assistance from the HUDCO to the tune of 50 per cent of the cost of the house that is, Rs. 2000 per house. The Government of Kerala have agreed to give a grant of Rs. 500 per house. The State Cooperative Bank will be giving a loan of Rs. 800. The balance Rs. 700 is to be met by the beneficiary.

The beneficiary has to repay the loan from the HUDCO and the Co-opertaive Bank in ten years including the period of construction. The rate of interest for the loan from the HUDCO will be 3 per cent. For both the loans a common rate of interest of 7.1 per cent will be charged from the beneficiary and the monthly equated instalments fixed for repayment by the beneficiaries. The monthly instalment will be Rs. 33.27 in a typical case where the repayment period will be 114 monthly instalments.

The Kerala State Housing Board has prepared 12 type designs to suit the land. One of these can be chosen by the beneficiary for the construction. The designs have been approved by the HUDCO and the Government of Kerala. These designs are prepared taking into consideration the conditions of living in the rural areas and adopting low cost techniques. The plans provide for one room, a kitchen, a varandah and a bath room. Houses are to be built on a foundation of mud mortar and corner pillars built with burned bricks or laterite according to availability. The non-load bearing walls can be in any material like sun dried bricks, burned bricks, laterite or other type of material locally available. The roof is of Mangalore pattern tiles which are available in all parts of the State. It will be erected on wooden rafters. The plans, estimates and list of materials are printed and made available to the service co-operative societies. The beneficiary has to carefully select the plan suitable for the site while submitting the application. The plans have to be followed strictly and no deviation whatsoever will be allowed. But there will be no objection to using cheaper specification than those given in the estimates, provided the service co-operative society is satisfied about the strengthen of the building. The water closet detached or attached is provided along with the house. All these houses are in the villages of Kerala which are thickly populated and which have amenities like school, dispensery, means of communications etc, already. These houses will come up in scattered house sites in these villages and therefore it is not necessary to have any separate programme for making the infrastructure facility available for the beneficiaries. They are expected to draw on the facilities already existing in the villages. The source of potable water will be either from open wells or the rural water supply schemes wherever they exist. Electricity is available in almost all the villages in Kerala.

The implementing agency of the scheme at the village level is the service co-operative society. The loan taken by the Housing Board from HUDCO will be passed on to the State Co-operative Bank on ordinary agency system, which will in turn pass on this amount to the District Co-operative Bank which will also be the agency of the Housing Board. There will be agreements between the KSHB and the State Co-operative Bank and the State Co-opertaive Bank and the District Co-opeartive Banks to govern these transaction. The loan to the beneficiaries will be secured on mortgage of property and the houses to be constructed on it.

The loan will be disbursed to the beneficiaries in three instalments.

Till the end of March 1982, the HUDCO has sanctioned a loan of Rs. 1000 lakhs for 50000 houses. The Government have provided Rs. 250 lakhs as grant from the plan provision. During 1982-83 the HUDCO has sanctioned another amount of Rs. 348 lakhs for 11600 houses. Government also provided Rs. 58 lakhs. Out of the above 50000 houses 38358 houses have been completed and the remaining houses are in different stages of progress.

"Jhumming" on the way out

"JHUMMING" is a problem common to all States of the North Eastern Region. It is a kind of shifting cultivation which leads to soil erosion and wastages.

The North Eastern Council, since its inception, has been trying to wean the tribals away from this outdated system. During the Fifth Plan period 5295 jhumia families were settled in an area of 11,300 hectares. This was done under eight pilot schemes.

These projects indicated that tribal families would readily accept irrigated and terraced lands for paddy cultivation. The development cost of one hectare came to Rs. 5,000. Each tribal family was allotted two hectares. The Sixth Plan will see 13 watershed management schemes to settle the jhumias.

Stabilisation of agriculture

Avoidance of jhumming has led to stabilisation of agriculture and settling the tribals. Seed farms watershed management and other schemes helped the tribals to produce more and get more than one crop per year.

Another significant realisation from this scheme was that the agro-climatic conditions of the region made the hill slopes ideally suited for horticulture and plantations. When with high yielding varieties and multiple-cropping aided by irrigation, enough paddy will began to be grown in the valleys, the slopes could be put to better use. This ultimately led to the watershed management concept which forms the basic strategy of the agricultural programmes of the North Eastern Council's Sixth Plan.

The effort has succeeded to a reasonable extent and the soil conservation organisation is vigorously pursuing the programme of land development through the introduction of terrace cultivation, land reclamation and raising of cash crops like coffee, pepper, cashew nuts etc. on the hill sides. As a result of all this, jhumming is on the way out from the hill sides of the "Seven Sisters".

Measures taken to reduce trade gap

INTERACTION was to be the essence of the relationship between the Commerce Ministry and trade community so that problem could be examined constructively. This was stated by the Union Commerce Minister, Shri V. P. Singh, at the first meeting with representatives of trade and industry and export promotion councils|commodity boards held in New Delhi recently.

Speaking on the Import and Export Policy for 1983-84, the Minister declared that it was necessary to know the potentiality and limitations of this policy. In this context the growth rates of Imports and Exports policy were very relevant, he felt. The higher rate of growth of exports in India during the last five years has been 16.3 per cent and the lowest rate of growth of imports eight per cent and so, the Minister stated, that even within the present parameters of international trade and possibilities of the Indian economy, it would take at least seven years for the exports to catch up with the imports.

However, the Minister declared, the Export Policy was not a total answer to the problem of the trade gap. He mentioned the four groups of items which constitute 75 per cent of Indian imports as petroleum and petroleum products including fertilizers, metals (ferrous and non-ferrous), machinery including transport equipment and edible oil. It would be difficult to slash down these imports without seriously affecting the economy. The only solution, he stated, to reducing imports was to produce these bulk items which take up three-fourth of Indian imports. The Minister mentioned that oil explorations were yielding result, fertilizer production was catching up and there was potential for production of edible oils and ferrous metals.

Shri V. P. Singh maintained that too restrictive an import policy and a squeeze on imports would not effect much savings of foreign exchange. It could adversely affect the growth of the country's economy by choking essential inputs. At the same time, he admitted that, unmindful imports would result in heavy dumping or the outgo of the foreign exchange on imports of consumer items. ☐

Growth rate in pace with target

THE AVERAGE RATE of growth during the first three years of the current Sixth Five Year Plan works out to more or less the growth rate projected for the Plan. Though the actuals for 1982-83 are still awaited, the average growth for the three years 1980—83 is estimated at five per cent as against the growth target of 5.2 per cent per annum.

Giving this information to the Consultative Committee of Members of Parliament attached to the Ministry of Planning, Shri S. B. Chavan, Minister of Planning and Deputy Chairman, Planning Commission, recently in New Delhi said that one of the important factors affecting the growth rate is paucity of financial resources. The performance of all the States taken together in mobilising additional resources from fresh measures has been quite good, though there has been considerable erosion due to deterioration in their current surpluses and contribution of their enterprises. The financial resoures available for the current plan period in the aggregate, are likely to be somewhat more than the original estimate in the nominal terms. To guard against the effect of inflation on prices of inputs, it is imperative that every effort is made, especially by the States to raise adequate additional resources. This is necessary not only for achieving the targets of the Sixth Plan but also to start off the Seventh Plan on a firm basis.

The meeting was attended by Prof. A. M. Khusro, Prof. M. G. K. Menon, Dr. C. H. Hanumantha Rao and Shri Mohd. Fazal, Members of the Planning Commission.

Cushion against calamities

The Planning Minister informed the Committee that the country had been able to develop a system which provided a cushion against natural calamities. In spite of the severe drought, the agricultural production during 1982-83 is expected to be 128 million tonnes. The shortfall against the target is much less than the shortfall experienced in earlier years of drought. The Planning Minister was confident that with more efficient utilisation of the irrigation potential created and other inputs, it should be possible to reach the Sixth Plan target of agricultural production in many crops. Of course, with 73 per cent of the net cropped area being under rain-fed agriculture, favourable weather was critical for maintaining agriculural growth.

Referring to the need for measures to control inflation and improve the balance of payments position, the Minister of Planning explained that the initiatives that should be taken in this respect extended to both the Centre as well as the States.

Some of the Members mentioned that in real terms there might be a shortfall in the financial resources available for implementing the Plan. The Minister agreed in this context that revenue budgets should at the very best be balanced. State Governments must raise resources for investment, and might have to take measures to raise the required additional money required for their Plan outlays.

Stagnation in agricultural production

Clarifying the position regarding alleged stagnation in agricultural production in recent years, Shri Chavan said that the question was being examined to see if agricultural production had reached a plateau. Several measures had been taken to raise production and productivity in paddy cultivation, where the growth rate had not been commensurate with the efforts in some of the States. Efforts are also being made to ensure that irrigation potential created is fully utilised and suitable drainage systems provided.

Referring to implementation of land reforms, the Planning Minister informed the Committee of the initiative taken to have the number of revenue courts increased in the States for expeditious settlement of cases. Initiative had also been taken to have the land reforms legislation included in the Ninth Schedule of the Constitution. Greater importance was also being given to dryland farming to achieve targets of agricultural production.

Generation of resources

The Planning Minister explained that the country today generated about 95 to 96 per cent of resources required for its Plans and hence its requirement of foreign resources was proportionately small. He agreed with the Members that imports should not be allowed where substitutes were available within the country. The Import-Export Policy for 1983-84 reflected this approach.

Replying to a Member, the Planning Minister clarified that in deciding the question of clearance of new projects, the status of projects on hand and the funds required to complete them were taken into account, considering the overall constraint on resources. To the extent additional resources were likely to be available, the Planning Commission could consider new projects for sanction.

Referring to the implementation of the Integrated Rural Development Programmes (IRDP), the Planning Minister explained that the Programme had been successfully implemented, the overall achievement being 102.5 per cent and States having achieved as much as 187 per cent. The reasons for shortfalls in some States needed to be looked into by the concerned State Governments. ☐

Over 31 lakh rural families assisted under IRDP

AS MANY AS 31.79 lakh rural families were assisted in the country under the Integrated Rural Development Programme (IRDP) during 1982-83 as against a target of 31 lakh families representing 102.5 per cent achievement in the scheme. Andhra Pradesh, Haryana and Karnataka exceeded their targets. The achievement for Andhra Pradesh was 142 per cent, for Haryana 151 per cent and for Karnataka 187 per cent. The number of families assisted in these States was over 2.8 lakhs, 93,000 and 1.77 lakhs respectively.

A review of the Twenty-Point Programme's achievements during the year 1982-83 made by the Planning Commission, reveals that, besides IRDP, over 90 per cent of the all-India targets were achieved in 1982-83 in some other schemes. These are : assistance to scheduled tribe families (91 per cent); environmental improvement of slums (93 per cent); National Rural Employment Programme (94 per cent); distribution of house-sites (97 per cent); health sub-centres (98 per cent); Integrated Child Development Services Blocks (100 per cent); rehabilitation of bonded labour (101 per cent); tree planting (108 per cent) and provision of drinking water to problem villages (140 per cent).

The schemes which could record less than 90 per cent but above 80 per cent achievement during the year pertained to sterilisations, village electrification, schemes for welfare of Scheduled Castes and energisation of pumpsets.

Achievement of targets for bio-gas plants, primary health centres and economically weaker sections (EWS) housing were over 70 per cent. Performance in the allotment to ceiling-surplus land and construction assistance for rural dwellings remained in the vicinity of 50 per cent only.

Programmes for the development of scheduled tribes were accelerated. The number of scheduled tribe families assisted during the year was 11.83 lakhs. The all-India target was 13 lakhs families. Maharashtra led the other States by assisting 82,417 families, followed by Gujarat where 20,217 families were assisted.

Environmental improvement of slums was undertaken on a massive scale and 17.17 lakhs people benefited from this scheme as against a target of covering 18.40 lakh people during the year.

Under the National Rural Employment Programme, employment for 33.15 crore mandays was created in rural areas as against the target of 35.32 crore mandays. While some States like Gujarat, Himachal Pradesh, Kerala, Rajasthan, Tamil Nadu and West Bengal excelled in implementing the NREP scheme, others like Jammu & Kashmir and Maharashtra showed poor results.

Allotment of house-sites to rural families progressed well and over ten lakh sites were given during 1982-83 as against the target of 10.43 lakh house-sites. In Uttar Pradesh, over 1.51 lakh house-sites were allotted while in Gujarat the allotment was more than 1.21 lakhs.

All the 320 Intergated Child Development Services Blocks (ICDS), which were to be set up during the year, were sanctioned. These included 11 ICDS blocks, which were sanctioned for the Union Territories. The target of 7,931 health sub-centres was nearly achieved with the setting up of 7,754 sub-centres between April, 1982 and February, 1983.

Over 36,000 bonded labourers were got freed and were rehabilitated whereas the year's target was to rehabilitate 35,828 such persons. The five States which implemented this scheme vigorously were Karnataka, Madhya Pradesh, Orissa, Tamil Nadu and Uttar Pradesh.

The target of planting 196.14 crore trees during the year was exceeded and 211.72 crore trees were planted during the year. The progress was spectacular in Maharashtra which far exceeded its target of 12 crore trees and planted over 22.8 crore trees during the year.

In 1982-83, 47,934 problem villages were provided with at least one source of safe drinking water whereas the target was to cover only 34,233 villages in the country. Maharashtra and Uttar Pradesh led the other States by covering 10,127 villages and 5,619 villages as against their targets of 3,373 and 1,650 villages respectively. ☐

Plan outlay for irrigation

Plan outlay for irrigation for 1983-84 is Rs. 2478.31 crores.

Of this Rs. 1759.55 crores go to major and medium schemes, Rs. 374.2 crores to minor irrigation, Rs. 183.67 crores to Command Area Development and Rs. 160.89 to flood control.

During the first three years of the present Plan 26 lakhs hectares were covered by field channels.

By the end of the Seventh Plan, 100 lakh hectares more would be so covered.

During 1983-84, the aim is to bring 12.5 lakh hectares under by field channels.

Fund requirements to construct water courses from 40 to 8 hectare outlets are being ascertained from States.

Health Ministry's bid to achieve family welfare target

THE MINISTRY of Health and Family Welfare has allocated an amount of Rs. 69 crores for payment of compensation for sterilisation during 1983-84. As the expenditure on sterilisation is directly linked with performance, there is no limit to expenditure as per approved pattern and additional funds as may be needed, will be provided in the Revised Estimates.

The Ministry is making all out efforts to achieve the family welfare target during 1983-84. The targets for 1983-84 have been fixed at 6.25 million sterilisations, 2.0 million I.U.D. insertions and 9.0 million contraceptive users including 1.0 million Oral Pill Users.

The year 1982-83 was the year of consolidation and further acceleration of the family planning programme in the entire country. The improvement in programme performance registered during 1981-82 gained further momentum during last year. The performance figures upto February, 1983, show a step-up in the number of sterilisations and I.U.D. insertions by 43.6 per cent and 36.9 per cent respectively over the corresponding period of last year. Oral Pill users showed an impressive increase of 39.4 per cent. There was also an increase of 5.3 per cent in the enrolment of conventional contraceptive users.

Couples protected

About 28.18 million couples (23.7 per cent of the total eligible couples in the reproductive age-group whose wives are in the age-group 15-44 years) were effectively protected against conception by one or the other approved family planning methods as of March, 1982. Of these, 20.7 per cent were protected by sterilisation alone. Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Orissa, Punjab, Tamil Nadu, West Bengal, Chandigarh, Delhi and Pondicherry have protected higher percentage of couples than the all-India percentage (23.7 per cent).

Medical Termination of Pregnancy

During 1982-83 (upto December, 1982) 283.211 (provisional) terminations done as compared to 285,138 done in the corresponding period of the last year (1981-82) thereby showing an increase of 9.7 per cent. Since the inception of the programme in April, 1972 more than 2.68 million terminations have been effected upto December, 1982 under the M.T.P. Act.

At the end of March, 1982, 3908 institutions were rendering M.T.P. services as compared to 3294 institutions at the end of March, 1981.

Compensation for IUD and Sterilisation

Assistance at the rate of Rs. 170 per female sterilisation and Rs. 150 for male sterilisation is being made by the Central Government with effect from December 1, 1981. Compensation at the rate of Rs. 8 per case I.U.D. insertion is also provided and an additional assistance of Rs. 7 per case is also provided for I.U.D. insertion done after M.T.P. for meeting the additional expenditure on drugs and dressings. The assistance admissible has been revised with effect from February 25, 1983 from Rs. 150 to Rs. 180 (including Rs. 100 to acceptor) for vasectomy; from Rs. 170 to Rs. 200 (including Rs. 100 to acceptor) for tuboctomy and from Rs. 8 to 12 (including Rs. 9 to acceptor) for I.U.D. insertion. Also Rs. 5 each is being given per sterilisation performed in camps. ☐

Performance of BHEL Tiruchi in 1982-83

IN 1982-83, BHEL Tiruchi contributed a turnover of Rs. 380 crores, almost one third of BHEL's total turnover of Rs. 1170 crores. The increase in its turnover is 33 per cent over the last year's turnover of Rs. 285 crores. This was achieved in spite of heavy power cuts and loss of production equivalent to 30 days of non-availability of power.

During the same period, BHEL Tiruchi despatched 1,27,000 Metric Tonnes of boiler components as against 1,15,000 Metric Tonnes during 1981-82. Three thousand MW of additional power generation capacity was added to the country during the year which is the highest ever achieved so far, out of which 2010 MW is from thermal.

BHEL Tiruchi have completed the supplies in 1982-83 for the addition of 3392 MW. As a result, nearly 1300 MW of supplied equipments are available for commissioning in the first quarter of 1983-84.

Improved techniques of Project Management continuously introduced in BHEL Tiruchi have shown tremendous reduction in the commissioning time of thermal sets which used to take 90 months a few years back, to 48 months now. Efforts are under way to improve this further and bring down the commissioning period to 42 months.

Science & Technology Notes

Thanks to acupuncture, eggs grow bigger

HEN'S EGGS in the Ussuriysk and Nadezhdinskaya poultry farms grew bigger after researchers of the Far Eastern Centre of the USSR Academy of Sciences used acupuncture. Each of the 200,000 hens exposed to this painless procedure now hatches eggs which on an average weight 3.2 grams more than usual. There has also been a sharp drop in the incidence of diseases.

(APN)

Advances in terrace farming

A MACHINE for cutting stepped terraces has been developed by the scientists and designers of the "Gruzselmash" research and production amalgamation. The machine performs all the complicated operations on any slope fit for terrace farming. Its use will save over 700 roubles per hectare of the developed mountain areas.

(APN)

Hydropower Station in a rucksack

A PLANT which weights only 80 kilograms can generate enough electric current to light and heat premises, power a refrigerator, washing machine and electric range and charge storage batteries. This micro-hydropower station, developed by engineers of the Soviet Central Asian Republic or Kirghizia, can be easily assembled and has only four component parts—a water scoop, a pressure hose, a hydraulic power unit and a voltage regulator. The plant can be actuated by a small stream carrying 50 litres of water a second at a grade of only four degrees.

(APN)

Energy saving a.c. Motor Drive from L&T

A VARIABLE speed inverter drive, designated STATIMAC, for standard squirrel cage ac motors has been introduced for the first time in India by Larsen & Toubro Limited (L&T). The drive has application in a wide range of industries like food processing, chemicals, fertilizers and cement.

Fire without smoke

"WHERE THERE is smoke, there is fire" asserts an ancient Indian saying.

But in "DHAULADHAR CHULHA" there is a fire without smoke.

People still burn firewood gathered from the forests to cook their food, and to keep themselves warm during chilly nights in Palampur, in Himachal Pradesh.

But the acrid smoke from the traditional woodburing stove (Chulhas) no more chokes the housewives in their kitchen, nor does it linger in the rooms, as a health hazard to the entire household.

This is so because of a new stove developed by Dhauladhar Project in Palampur area. It is called the "Dhauladhar Chulha".

Smokeless

The new stove besides being smokeless, reduces fuel consumption by 50 per cent, cooking time by 30 per cent and can function as a radiator in winter. Cooked food remains warm on the stove upto five hours, after the fire is dead. About 650 such stoves are in use in the 300 sq. km. Dhauladhar Project Area.

People of the area are allowed to collect firewood from the forests. Since the new stove requires less fuel, womenfolk spend less time in the monotonous search for fuel. As it cooks quicker, they get more time to attend to other household chores.

Blessing in disguise

Firewood costs arounds Rs. 40 per quintal in the area and prices are going up. The new stove is, thus, a blessing for those have to buy firewood, because the people of the area are by and large poor.

One Dhauladhar stove costs around Rs. 150. Plans are afoot to supply these stoves to other areas in Kangra District and other districts of Himachal Pradesh.

Dhauladhar Project aims at the integrated development of forestry, animal husbandry, small industry etc. in a 300 sq. km. area, around Palampur.

Economic Notes

P and T Factories achieve production target

DURING THE YEAR 1982-83, the four telecommunications factories of the P & T Department have achieved a production of Rs. 26.56 crores as against Rs. 21.75 crores during 1981-82. The production during 1982-83 has been an all time high. A target of production of Rs. 34.22 crores has been set for 1983-84.

There are four P&T Departmental Telecommunications Factories at Jabalpur, Calcutta, Bombay and Bhilai which meet the requirements of the Department of central battery manual multiple and non-multiple exchanges, trunk exchanges, private branch exchanges, manual positions for special services and other hardware telecommunications stores items for line construction, microwave towers etc.

A new Telecom Factory is being set up at Kharagpur in West Bengal at a cost of over Rs. 12 crores. This factory will initially have a modern mechanised foundry for production of cast iron line store items required for the construction of wire telephone and telegraph lines mainly for development of telecommunications facilities in rural areas and smaller towns. This factory is expected to be commissioned by the end of 1984.

Record Production of ICF Coaches

THE INTEGRAL COACH FACTORY (ICF), a production unit under the Ministry of Railways, has achieved a record production of 775 coaches during 1982-83. This is the highest ever production since its inception 27 years ago. This figure also exceeds the present target and installed capacity of 750 coaches. The previous best was 752 coaches in 1978-79.

The factory also broke the record in producing the maximum types of coaches during 1982-83 by manufacturing 28 different types of coaches.

A noteworthy feature of the production during 1982-83 was that the factory manufactured special air-brake coaches for the Rajdhani Express.

National Awards for Small Scale Industries

THE GOVERNMENT has instituted National Awards for outstanding entrepreneurs who will set up small scale industries. The first three awards will carry a prize money of Rs. 25,000, Rs. 20,000 and Rs. 15,000 respectively.

There will be 28 special recognition awards with prize money of Rs. 10,000 to be conferred on entrepreneurs from each State and Union Territory.

The awards instituted by the Ministry of Industry will be granted to deserving small scale industrialists, individuals or firms registered with the State Director of Industries and established within five preceding calendar years of the year of award.

For the year 1982, the recognition award will be given in the year 1983.

Expansion of Bhilai Steel Plant

THE QUALITY of plates rolled out at the trial run conducted by the heavy plate section of Bhilai Steel Plant was satisfactory according to the information available with the Department of Steel. The heavy plate section was the first major unit under the Bhilai Steel Plant expansion programme.

With the commissioning of this unit, 3200 mm plates will be rolled for the first time in this country. The first two convertors of steel melting shop-II and one bloom caster and one slab caster in the continuous casting shop are expected to be commissioned in June, 1983.

The second 30 MW units of captive power plant will be ready for commissioning in due course. The 4 million tonne expansion programme will be completed with the commissioning of the 7th blast furnace complex by December, 1984.

Expansion in fertilizer capacity

WITH A VIEW to meeting the growing demand for fertilizers, the production capacity is being expanded. Eight new nitrogenous fertilizer plants and 11 new phosphatic fertilizer plants will be set up in the country during the Sixth Plan period.

Of the eight nitrogenous plants, six gas-based fertilizer plants have been sanctioned and will be set up in the Central and Northern Region. These plants each having a capacity of 1350 metric tonnes per day will be located, one each in Madhya Pradesh and Rajasthan, and four in Uttar Pradesh.

Of the 11 phosphatic fertilizer plants, the Paradeep and Cochin (Expansion) projects in the public sector have already been approved by the Government. Sanctions have also been given for six new or expansion schemes in the private sector. These are Tuticorin (Expansion), Goa (Expansion), Mangalore phosphate plant, Hindustan Lever (Haldia), Godavari Fertilizers (Kakinada) and Porbunder plant in Gujarat.

In the implementation of the programme for development of additional fertilizer capacity during the Sixth Plat, all the three sectors, namely, public, cooperative and private would have a share.

The demand for fertilizers by the end of the Sixth Plan period, 1984-85, is projected at 60 lakh tonnes of nitrogenous and 23 lakh tonnes of phosphatic fertilizers.

Inland container gain momentum

THE FIRST Inland Container Depot in India has become fully functional at Bangalore and 323 containers moved from ICD Bangalore to Madras Port and back in 1982-83. Similarly, Guntur in Andhra Pradesh has recently started functioning and a substantial quantity of the current year's tobacco exports has moved through in 50 containers from Araiparthi to Madras harbour through the Guntur ICD. These 50 containers carrying 500 tonnes of tobacco were carried in the first liner container train in India. The tobacco was loaded into ships in the last week of April 1983. The second container special with export tobacco in 50 more cotnainers will be loaded next week.

This is a major achievement in the field of facilities for exporters as now they can book their export cargo from the Inland Container Depot on a through Bill of Lading and therefore it will not be necessary for the exporters to go to the Port for having their goods loaded on the ship. Delhi and Ahmedabad are also expected to become operational soon and, Madras and Bombay are being utilised as port of exits for these through ICDs.

Setting up of new fertilizer plants

THE PRESENT estimated total cost of the new fertilizer plants under construction at Thal, Namrup (Namrup III), Paradeep in the public sector and Hazira in the cooperative sector is Rs. 2512 crores. Besides, the new public sector gas based plant in Guna (Madhya Pradesh) is estimated to cost over Rs. 600 crores. It is also proposed to set up four similar gas based plants in U.P. and one in Rajasthan, at a total investment of about Rs. 3000 crores.

This information was given by the Minister of Chemicals and Fertilizer, Shri Vasant Sathe, in Rajya Sabha in a written reply to a question by Shri Vishvajit Prithvijit Singh.

Providing succour to deserving beneficiaries

SHRI HARINATH MISHRA, Union Minister for Rural Development has urged the State Governments and Union Territories administrations to ensure that the relief and succour reaches the really deserving beneficiaries under the Integrated Rural Development Programme (IRDP) and the National Rural Employment Programme (NREP). Inaugurating a two-day conference of the State and Union Territory Secretaries, in-Charge of Rural Development and National Rural Employment Programme in New Delhi recently, the Minister advised them to go into all aspects of identification of beneficiaries so that undeserving persons were not provided assistance through these programmes.

Shri Mishra said that under the IRDP, nearly 88.55 lakh families had been provided assistance and the target for coverage of families for three years had been nearly achieved. The utilisation of funds on subsidies and the quantum of credit mobilised have been speedily rising. Over Rs. 2000 crores have been invested during the last three years and nearly 30 lakh Schedule Castes and Schedule Tribes families have been assisted under this programme. The coverage of these communities has also exceeded the minimum target laid down in the guidelines. Under the National Rural Employment Programme over 350 million man days of employment on an average per year have been generated.

Expansion of T.V. service during Sixth Plan

WITH THE completion of the VI Plan Schemes, TV service is expected to become available to an estimated rural population of 1,465 lakhs spread over about 1.40 lakhs villages which include tribal areas.

This information was given by the Deputy Minister of Information and Broadcasting Shri Mallikarjun in Rajya Sabha in a written reply to a question by Shri F. M. Khan.

The Minister said that at the beginning of the Sixth Plan, services were available to 48,103 villages covering a rural population of about 4820 lakhs. At present, rural population coverage has gone up to about 683 lakhs spread over 53,884 villages. Sixth Plan Schemes drawn up are intended to enchance this coverage significantly.

Electricity for 42 Sikkim villages in 1982-83

RURAL ELECTRIFICATION, which is an important component of the Twenty-point Programme, is being vigrously pursued in Sikkim. A target of providing electricity to 42 villages has been set for 1983-84. The state budget has provided Rs. 42 lakhs while the Rural Electrification Corporation has given a loan of rupees one crore for this purpose.

In 1982-83, the State exceeded its rural electrification target and provided electricity to 31 villages against the year's target of 25 villages.

So far, 112 villages out of 405 villages in Sikkim have been covered under the rural electrification scheme.

Parliament worked for over 576 hours in 1982

THE TOTAL OFFICIAL time taken by legislative, financial and non-financial business in both the Houses in 1982 was 576 hours and 37 minutes. In Lok Sabha the legislative business lasted 97 hours, financial took 163 hours and 45 minutes and the non-financial business 109 hours and 52 minutes. In Rajya Sabha the legislative business took 77 hours and fourty minutes, financial 67 hours and 43 minutes and non-financial 61 hours and 17 minutes.

According to the Annual Report of the Department of Parliamentary Affairs for 1982-83, the Government also agreed to give Government's quota of parliamentary time for discussion on urgent matters at the request made by the members.

During 1982, 2993 assurances were recorded from the proceedings of both Houses. 1527 were in Lok Sabha and 1466 in Rajya Sabha. Similarly, 1549 implementation reports were laid during the year on table in Lok Sabha and 1512 in Rajya Sabha. 73 Government bills were passed during 1982. ☐

Books

Problems of Economic Development

PROBLEMS OF INDIAN ECONOMIC DEVELOPMENT by K. N. Prasad. Published by Sterling Publishers Pvt. Ltd., L—10, Green Park Extension, New Delhi 110016. First published 1983 Pages 624. Price Rs. 200.00.

THE AUTHOR takes a macro view of India's economic development when he discusses several issues in the three parts of this book viz., national dimensions, regional dimensions and a case study of Bihar economy, the fourth part is in the form of an epilogue entitled 'Indian Drama of Democratic Planning'. The book is informative and the author has no pretensions about its being a highly documented or researched work. There are repetitions galore obviously for the reason that most of the content constituted articles published elsewhere and as such, the content could not be written in the style of a text-book.

Nevertheless, there is density of ideas in what the author has to say but unfortunately reader's interest does not remain sustained as there is a sudden shift of topics, thus losing grips over the logical sequence. It would have been better if the author had brought out a thinner book in size which could have received adequate editorial attention, thus avoiding the pitfalls which nauseate the reader.

On the problem of unemployment the author says that "unemployment in a number of developing countries in the Third World is an urban phenomenon and a phenomenon of the middle class. The cities in them are exploding with rural migrants. A great bulk of the urban unemployed are, in effect, the spill-over or an over-flow of the rural." This observation, as a sampler of the author's style, does not, however, convince us as unemployment is much more acute in the rural areas and is present amongst the landless labourers rather than the middle class. The chapter on Indian drama of democratic planning is interesting as the author has generalised many an issue and has portrayed philosophically his ideas on different matters. But the most useful part of the book is the analysis of Bihar's economy as a case study.

Describing the economy of Bihar as the 'feet of clay', the author remarks that although agriculture constitutes its core by providing livelihood to 80 to 82 per cent of the State's total population. Bihar remains a food deficit State. On the question as to why Bihar economy lags behind other States, the author believes that "there is no universal reason why Punjab is rich and why Bihar is poor. For Punjab's wealth and Bihar's poverty we have to examine carefully the whole intrinsic nature, and all the outward circumstances (to borrow Bagehot's words) of the two States. Better a strong pair of boots than a Rolls Royce with three wheels missing." This is how the author concludes the chapter.

Navin Chandra Joshi

Participatory Research

Participatory Research—An Introduction by Participatory Research Network affiliated to International Council for Adult Education, Pages 48; and 'Participatory Research—An Emerging Alternative Methodology in Social Science Research' edited by Yusuf Kassam and Kemal Mustafa; Pages 252; 1982. Published by Society for Participatory Research in Asia, Khanpur, New Delhi.

PARTICIPATORY RESEARCH is relatively a new experiment which supports and contributes to the efforts of individuals, groups and movements which challenge social inequality and work to eliminate exploitation. Participatory Research challenges the way knowledge is produced by conventional social science research methods and disseminated by educational, social and cultural institutions.

There does not seem to be any need of bringing out separate book as 'Participatory Research—An introduction'. It would have been better if this book is made the first part of the second book under review. Both the books are complimentary to each other and should have been clubbed together.

The authors have included the case studies in the chapter 'Participatory Research in Practice' wherein they have thrown light on the application of these methods and its uses and the results obtained by application of these methods in various countries under varying circumstances. What is of foremost importance is that the Participatory Researcher should make an effort to be sure that methods complement rather than supplant indigenous forms of expression, communication, discussion and decision-making.

The second book 'Participatory Research—An Emerging Alternative Methodology in Social Science Research' is a compilation of papers presented at the African Regional Workshop on Participatory Research in which representative from various countries beside India participated.

The main objective of bringing out the book by Yusuf Kassam and Kemal Mustafa is to analyse, refine and systematise the emerging concept and methodology of Participatory Research.

The dissatisfaction with the conventional research methodologies in the social sciences led to the birth of Participatory Research Approach. PRA is poised for progressive social change for the betterment of the poor and the oppressed.

The goal of Participatory Research in general is the dissolution of the social division between mental and manual labour. The means to the goal is in fact its solution i.e. continual democratic interaction whereby men, women and children are respected and respect one another as politically capable of knowing and acting upon the resolution of their own physical and social needs. Any participatory research project which fails to propagate democratic interaction will only enhance rather than destroy the division between mental and manual labour.

Part II of the book includes seven Case Studies but that also does not represent typical examples of Participatory Research Projects.

The main drawback in the Participatory Research Project is that it become a base for local power politics. From amongst the oppressed classes, certain individuals spouting the appropriate populist slogans can try to gain leadership positions which are then used to disturb rather than promote democratic interaction and collective decision-making.

Vimal Suneja

Japan checks inflation

JAPAN has done it again. This time the island nation out-performed both advanced and developing countries world-wide in the battle against inflation and recorded the lowest annual rate—4.7 per cent—for 1981, which represents a decline from its 7.1 per cent rate in 1980, according to a survey carried out by the ILO Bureau of Statistics, which compared inflation rates and trends in 65 developed and developing countries in Africa, Asia, Europe, the Americas and Oceania.

Among other industrialised countries which managed to keep below a two-digit mark in 1981 were the Federal Republic of Germany with 6.3 per cent and the United States with 8.7 per cent. France and the United Kingdom, with 14 and 12.1 per cent respectively, were among the 26 countries with relatively high rates in 1981—10 to 20 per cent—while 13 recorded rates above 20 per cent and 24 countries were in the moderate 5 to 10 per cent bracket.

Soaring inflation once again sent Argentina to the top of the list with an annual rate in 1981 of 131.3 per cent, passing Israel, which had the highest inflation rate in 1980 but which fell to second place with a 101.5 per cent annual rate for 1981.

Compared with 1980 annual rates, inflation declined in 1981 in 42 of the countries for which data were available, as in Turkey, going from 93.7 per cent to 27.1 per cent and Egypt, from 20.3 to 9.5 per cent, while it continued to rise in varying degrees in the remaining 23, for example, in Portugal where it went from 13.1 per cent in 1980 to 24.9 per cent in 1981, and in Kenya, rising to 24.8 per cent from 11.3.

In the two East European countries which made figures available, Yugoslavia reported a high rate of 35.7 per cent for 1981, a slight improvement over its 1980 annual rate of 37.5, while Hungary's rate, a moderate 6.4 per cent, had risen over the 4.4 per cent of 1980.

Switzerland, where the cost of living has been inching up since 1978 when the annual inflation rate was a minimal 0.7 per cent, reported a 6.6 per cent rate for 1981.

In addition to Japan, two other Asian countries—Indonesia and Malaysia—reported 1981 inflation rates of less than 10 per cent with 7.3 and 8.7 per cent respectively. For Indonesia, this represented decided drop from its 1980 rate of 17.1 per cent.

Rehabilitation of bonded labour

OVER 30349 BONDED LABOURERS have been rehabilitate up to December last year, according to the information available with the Ministry of Labour. The number of bonded labourers to be rehabilitated during 82-83 was 35828.

In addition to the rehabilitation, the process for identification is also been carried on a continuing basis.

Shri Veerendra Patil, Minister for Labour and Rehabilitation has written to the Chief Ministers to consider the association of voluntary agencies for the process of identification of bonded labour. The Minister also emphasised the need for conducting of fresh surveys in susceptible areas and isolated pockets.

The states have also been urged to set up vigilance committees quickly to oversee the programmes of identification and rehabilitation. In order to ensure a measure of continuity in the functioning of the committees, term of members have been raised to two years.

During the first nine months of the year Andhra Pradesh rehabilitated 1471 bonded labourers; Bihar 3671; Karnataka 10197, Kerala 20, Orissa 12264, Rajasthan 114, Tamil Nadu 812, Uttar Pradesh 2615 and the process for rehabilitation of remaining labourers was continuing.

With a view to supplement the efforts of the State Governments, a centrally sponsored scheme was under operation which envisaged central financial assistance on matching grant basis. The states have also been advised to suitably integrate, dovetail this scheme with other schemes of IRDP, NREP, Special Component Plan for Scheduled Castes and Tribal sub plans and other on going schemes for effective and permanent rehabilitation of the released bonded labourers. A blue print containing detailed guidelines for bringing such an integration for securing a qualitative and meaningful rehabilitation has also been sent to the states.

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The 20 point programme

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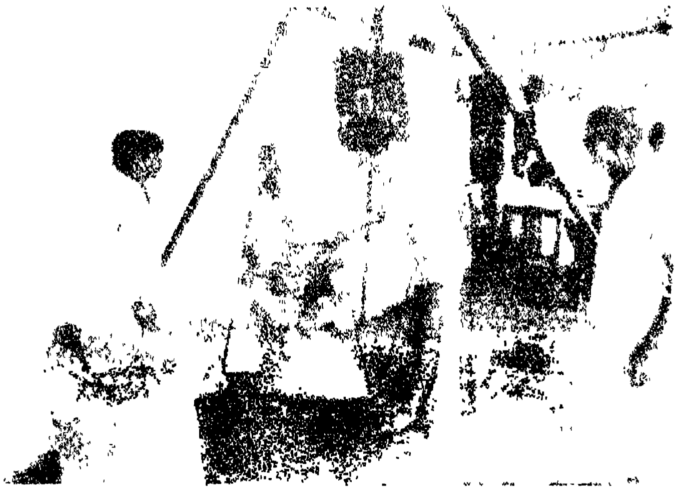

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State	No. of Shops
Andhra Pradesh	2842
Gujarat	707
Haryana	276
Himachal Pradesh	2742
Jammu & Kashmir	24
Karnataka	706
Madhya Pradesh	726
Maharashtra	1256
Manipur	56
Meghalaya	11
Nagaland	16
Orissa	401
Punjab	155
Rajasthan	1923
Tamil Nadu	224
Tripura	74
Uttar Pradesh	692
West Bengal	22
All Union Territories	186

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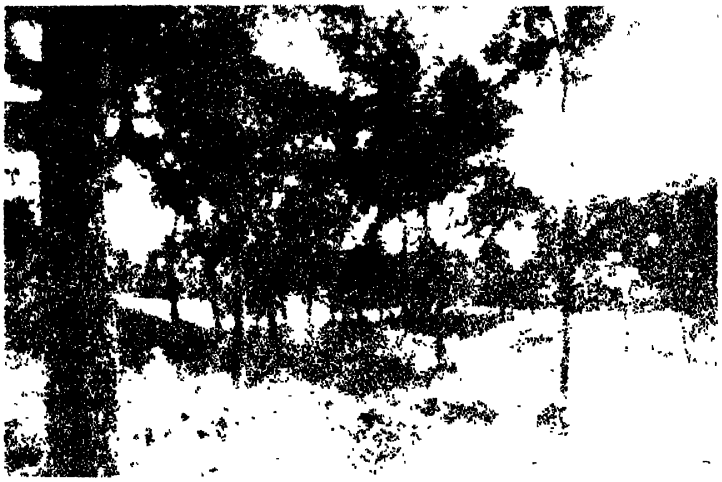
The 20-point programme monitoring cell reports . . .



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Public distribution system

Maharashtra	[illegible]	[illegible]	[illegible]
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Assam	[illegible]	[illegible]	[illegible]
Himachal Pradesh	[illegible]	[illegible]	[illegible]
Lakshadweep	[illegible]	[illegible]	[illegible]
Uttar Pradesh	[illegible]	[illegible]	[illegible]
Meghalaya	[illegible]	[illegible]	[illegible]
Rajasthan	[illegible]	[illegible]	[illegible]
Orissa	[illegible]	[illegible]	[illegible]
Gujarat	[illegible]	[illegible]	105.[illegible]
Tripura	12400	13780	105.8
Manipur	6000	[illegible]	104.[illegible]
West Bengal	65000	67770	104.2
Tamil Nadu	110000	113708	103.[illegible]
Jammu & Kashmir	20[illegible]00	[illegible]541	102.7
Bihar	9000	9100	100.1
Punjab	6000	6001	100.0
Nagaland	10300	9850	95.[illegible]
Andhra Pradesh	142000	129415	91.1
Karnataka	197500	176738	89.5
Haryana	120300	85061	70.8
Sikkim	8000	5018	62.7

OUR FUELWOOD
RESOURCES

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yojana

JULY 1-15 1983 · RUPEE ONE.

Brandt's second message

NEXT ISSUE

Nationalised banks – a critique

The 20-point programme monitoring cell reports. . . .

3

Rural roads

Rural roads are the arteries and veins of the country. The mobility of the economy depends on the proper maintenance of these roads. They are also essential for giving relief to over-crowded cities.

The objective of the Five Year Plan is to link 50 per cent of the villages with population of 1000-1500 and all villages with a population of 1500 and above by 1990. Accordingly, a total of 40,000 villages are to be linked, half of this during the Sixth Plan period and the balance thereafter. Against this 3441 villages are expected to have been linked during 1981-82. The target is to link additional 2600 villages during 1982-83. For this purpose a sum of Rs. 195.2 crores was allocated in the Annual Plan for the year 1982-83.

YOJANA

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Fuelwood in the Indian economy

The rapid depletion of forests as also the loss of forest areas has led to serious problems of erosion, floods, siltation, desertification, etc. The author has attempted in this article to analyse the manner in which our fuelwood resources could be enhanced and dependence on commercial fuels reduced.

Dr. V. R. Desai

FUELWOOD occupies a predominant place as an energy source in the Indian economy. Fuelwood and wood energy systems offer innumerable benefits like low costs, reduction of wastes, environmental stability, high employment potential and above all, the evolution of the most vital component of the development process. In order to exploit the renewable sources of energy, the Planning Commission constituted a Committee to study all aspects of fuelwood including production, consumption, utilisation for by-products and other related matters for energy purposes, in the light of past experience in India and the other countries and to work out a suitable proposal for integrated development.

The Committee worked under the Chairmanship of Dr. M. S. Swaminathan, Member, Planning Commission. A sub-Committee prepared the draft report which was revised and approved.

The Committee has outlined an integrated action plan. A summary of the "Report of Fuelwood Study Committee" and their main recommendations are analysed in this study.

Energy

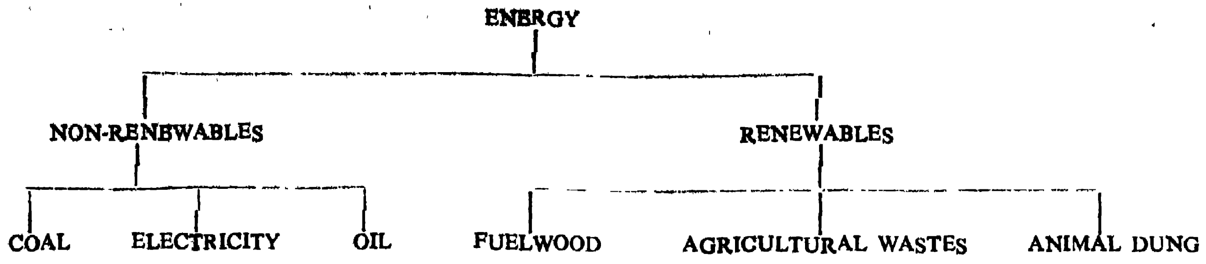
Energy plays a vital role in human development and welfare, as all important economic activities of the present civilisation are dependent on availability and level of consumption of energy. Energy is an important parameter in the overall economic development activity of any country. It has become Synonymous with progress in all fields of activities. What is more important, it is an essential input to all production activity. The process of economic development demands increasingly higher levels of energy consumption. The per capita commercial energy consumption in India is only a tenth of the globel average. The per capita power consumption in India was only 134 Kwh. in 1979-80 compared to 8487 Kwh. in the United States, 4166 Kwh. in the United Kingdom. The per capita power consumption in 1979-80 ranged from just 6 Kwh. in Manipur to 384 Kwh. in Delhi. The Sixth Plan has envisaged to raise the per capita power consumption in the country to 212 Kwh. by the end of 1984-85.

The total commercial energy consumed increased six-fold during the last twenty-eight years. Between 1953-54 and 1981-82, the annual growth rate in commercial energy consumption was 6.78 per cent as against the GDP growth rate of 3.68 per cent, the GDP-energy elasticity coefficient has remained stable at around 1.8 and is high compared to developed countries.

While India, in common with many developing countries, consumes energy in a variety of forms ranging from electricity obtained from nuclear fuels to agricultural waste and animal dung, the pattern of commercial energy consumption is characterised by a high degree of oil dependency, the share of oil products (measured in coal replacement terms) being close to fifty per cent. Just when the Indian economy had managed to adjust itself to the oil price increases of 1973-74, there has been a three-fold increase in oil prices in the last two years. Apart from the heavy strain this will cast on the country's balance of payments, even the physical availability of oil in the international markets will pose a problem in the years to come.

It has been estimated that if the economic growth rates were to be in the range of 5.5 to 6 per cent and if no deliberate measures were initiated to manage the energy demand, the energy requirement would register a four-fold increase within the next 20 years. Thus, if India's plans of economic growth are not to be hampered by inadequacies of energy supply, reduced dependence on imported oil has to be the key element in our development strategy. In this context, therefore, India's salvation lies in its ability as to how best and how fast it could work up a 'Regimen of alternatives' that fully fit into our milieu and harness our potential in this respect.

The energy consumption pattern in India shows a high commercial energy-GDP elasticity caused partly by commercial fuels. The bulk of commercial energy consumption is in the industry and transport sectors, while the domestic and the agricultural sectors continue to rely mostly on the so-called non-commercial fuels. Coal, oil and electricity constitute commercial or non-renewable source of energy, while fuelwood, agricultural waste and animal dung constitute non-commercial or renewable sources of energy and continue to contribute a substantial proportion of the total energy consumed in the country. Out of total energy consumption of 492.3 million tonnes of coal replacement (MTCR) in the country, 60 per cent comes from commercial sources while 40 per cent from non-commercial sources. The share of non-commercial energy was just 13.9 per cent in 1953-54.



Figural. SOURCE OF ENERGY

In addition, the following renewable sources of energy need to be suitably harnessed :—

(a) Photosynthetic pathway through bio-mass production and bioconversion devices and technologies; (b) Solar thermal devices and systems using direct solar radiation as input; (c) Photo-voltaic devices and systems for direct conversion of solar energy into electricity; (d) Hydro power; (e) Wind power; (f) Ocean thermal gradients energy; (g) Tidal power; and (h) Geo-thermal power.

The data on energy consumption in rural and urban households indicates that the percentage share of commercial energy is only 20 per cent in the household consumption pattern of the rural areas as compared to 49 per cent in case of urban household. Oil products dominate with 16.9 per cent in rural households as against 30.2 per cent in urban households. Non-commercial or renewables dominate the consumption pattern in rural and urban households. Although, the share of non-commercial energy is 51 per cent in urban areas, it is 2 per cent more than commercial energy, the rural areas consume nearly 80 per cent of energy derived from renewables. In this, firewood is the major source of household energy with 68.5 per cent in rural households and 45.5 per cent in urban households, followed by animal dung and other bio-mass products. With the present trend of hike in oil prices, consumption of commercial fuels is bound to go down and dependence on non-commercial fuels would increase. The data on sector-wise energy consumption in household sector is given in Table 1.

The non-renewable sources of energy like coal, gas and oil, cannot last indefinitely. It is, therefore, desirable that India explore and speedily develop all the 'Renewable' that can be tapped in a location-specific decentralised manner. According to one study, renewable sources of energy could meet a very significant portion of the total energy requirements of the country by 2,000 A.D., starting with a smaller level in the first five years and then rapidly growing in importance in the next decades. The study shows that the contribution could be as much as 49 per cent including 12 per cent from hydro, 16 per cent from fuelwood and biomass and 21 per cent from modern renewable energy technologies including solar, modern biogas, wind, hydrogen and ocean thermal energies.

In India the situation is more favourable for the exploitation of such resources in that there is a great deal of sunshine all over the country and there are vast areas which are not served by centralised energy systems.

A Commission for Additional Sources of Energy (CASE) has already been established to co-ordinate and accelerate the efforts in this field. The Sixth Five Year Plan (1980—85) has laid special emphasis on the development of renewable sources of energy. The broad approach in the Plan would be :—

(i) To implement on a large scale, programmes such as those of energy forestry and biogas where technology development has already reached a stage which permits field application.

Table 1. Source-wise energy consumption in Households Sector

Energy	Rural per capita energy consumption				Urban per capita energy consumption			
	% share of Energy forms	% share of source of supply of each form			% share of Energy forms	% share of source of supply of each form		
		Purchased	Collected	Home Grown		Purchased	Collected	Home Grown
1	2	3	4	5	6	7	8	9
1. Electricity	0.6	100.0	0.0	0.0	5.9	97.0	3.0	0.0
2. Oil Products*	16.9	100.0	0.0	0.0	30.2	100.0	0 0	0.0
3. Coal Products	2.3	65.1	34.9	0.0	13.7	95.6	4.4	0.0
4. Firewood	68.5	12.7	64.2	23.1	45.5	73.7	14.8	11.5
5. Animal dung	8.3	5.1	26.2	68.7	3.2	49.1	12.3	38.6
6. Others	3.4	8.9	61.0	30.1	1.5	71.2	28.8	0 0
7. Share of commercial fuels	20%				49%			
8. Share of non-commercial fuels	80%				51%			

(ii) To carry out field testing and demonstration on a countrywide basis of technologies, which have the potential to become commercially viable in the next five to seven years, and,

(iii) To intensify research and development of other technologies where the potential is likely to be available over a longer time horizon.

Fuelwood Resources

India has a total forest area of about 75 million hectares which forms about 22.8 per cent of the total geographical area of the country. State-wise. forest area in the country is shown in Table-2. Of the total forest area of 7.48 crore hectares, Madhya Pradesh with 1.62 crore hectares area leads the other States, followed by Orissa (68 lakh hectares area). Andhra Pradesh (64 lakh hectares), Arunachal Pradesh (52 lakh hectares) and Uttar Pradesh (51 lakh hectares). In terms of forest as a percentage of total area, it varied between 3 per cent in Haryana to 61.7 per cent in Arunachal Pradesh. While twelve States had less area under forest than the national average, all the other States had higher share than the national average. Of the total forest area, 1.60 crore hectares is potentially exploitable. Here too, Arunachal Pradesh and Madhya Pradesh maintain their lead.

The average per capita forest area is around 0.12 hectares (1976-77). The average annual increment is about 0.5 tonne of wood production|hectare per annum. Considering this, the sustained annual yield from the natural forest in the country could be estimated to be around 37.5 million tonnes. However, not all the area under forest is presently in use. Only about 45.6 million hectares is exploitable and another 14.8 million hectares is considered as potentially exploitable. Thus, the area that could be made available for purposes of production of wood is about 60 million hectares with an annual production potential of 30 million tonnes of wood. The recorded production of fuelwood from this area is of the order of about 15 million tonnes. This is exclusive of the wood removed from the forests by privileged holders.

TABLE 2

STATE-WISE FOREST AREA (1976-77)

States	Forest Area (000(ha)	Forest as % of total area	Potentially Exploitable (000(ha)	Other Forest area(ha)	Per Capita Forest Area (ha)
1	2	3	4	5	6
Andhra Pradesh	6,437	23.25	1,661	1,665	0.13
Assam	3,381	39.24	165	229	0.17
Bihar	2,928	16.84	NA	225	0.05
Gujarat	1,959	10.00	NA	287	0.07
Haryana	146	3.30	30	101	0.01
H.P.	2,177	39.11	202	1,000	0.56
J & K	2,104	9.47	203	1,545	0.40
Karnataka	3,757	19.59	235	158	0.11
Kerala	1,133	29.15	172	236	0.05
Madhya Pradesh	16,239	36.67	4,009	2,048	0.34
Maharashtra	6,672	21.68	254	2,047	0.12
Manipur	602	26.92	311	NA	0.47
Meghalaya	637	28.32	565	NA	0.55
Nagaland	289	17.48	179	52	0.47
Orissa	6,973	43.61	1,042	68	0.28
Punjab	206	4.09	NA	106	0.01
Rajasthan	3,461	10.11	1,215	8,493	0.12
Sikkim	283	38.62	107	175	1.20
Tamil Nadu	2,254	17.33	37	4,332	0.05
Tripura	603	57.54	48	198	0.33
U.P.	5,075	17.24	599	2,003	0.05
West Bengal	1,183	13.47	65	33	0.02
UNION TERRITORIES					
Andaman & Nicobar	746	39.99	243		4.91
Arunachal Pradesh	5,154	61.67	4,354	NA	9.30
Others	713	33.81	469	188	NA
All India	74,786	22.75	15,995	25,085	0.12

As regards the non-forest area, the data collected in the 28th Round of National Sample Survey indicated that about 30 million tonnes of firewood is obtained from private lands and gardens and from trees around houses. In addition, another 4 million tonnes of fuelwood production has been estimated from plantations under social forestry schemes. A total of about 0.52 million hectares of area has been planted during the Fifth Five Year Plan under this scheme. Thus the total availability of fuelwood at present is about 49 million tonnes, as against the total requirement of 133 million tonnes.

Efficient Utilisation of Existing Resources

Keeping in view the facts mentioned above, it is important to analyse the manner in which we could enhance our fuelwood resources and reduce dependence on commercial fuels as also minimise the use of animal dung. Stem wood, branches and leaves constitute about 70 per cent, 20 per cent and 10 per cent, respectively of the total above ground biomass of a tree. Excluding leaves, the other two components can be used as a good source of fuel, if it can be extracted and supplied to the consumers at reasonable costs. Taking the ratio of timber extracted and logging wastes as 1 : 1, the logging wastes in the country is estimated to be about 20 million tonnes.

Another method of augmenting the fuelwood supply is by use of improved forms of wood burning appliances like Anghithis, and Chullas (wood stove). The traditional ways of burning wood for cooking and heating are in general, very inefficient and their energy requirement for cooking has been estimated to be about 5 times as high as cooking on a kerosene stove ; as about 90 per cent of the heat value of wood is wasted. Improvement in stove designs has been found to reduce the consumption of fuelwood for cooking up to about 70 per cent. Improved cremetoria also save as high as 40 per cent of fuel need. By appropriate R. & D. efforts and suitable adoption of such improved devices, considerable saving of fuelwood could be achieved.

Management of Fuelwood Resources

The demand for fuelwood, the most important source of traditional energy for domestic use has grown faster than supply. As one of its dimensions the natural forests are being consumed at a much faster rate than their regeneration both natural and artificial. Consequently, the biological capital of forests, and soils have been reduced considerably. The situation has been further aggravated with the loss of about 4.3 million hectares of forest land to-date in favour of agriculture and other developmental activities. The details of forest areas lost in some of the States are :—

State	Area Lost (Thousand ha)
1	2
Andhra Pradesh	202.2
Assam	72.6
Bihar	67.6
Gujarat	180.4
Jammu & Kashmir	90.8
Karnataka	308.4
Kerala	189.0
Madhya Pradesh	180.8
Maharashtra	215.5
Orissa	109.3
Rajasthan	85.8
Tamil Nadu	65.6
Uttar Pradesh	221.8
West Bengal	324.8

Source : Central Forestry Commission, Ministry of Agriculture, 1980.

Inter alia, the rapid depletion of forest as also the loss of forest areas has led to serious problems of erosion, floods, siltation, desertification, etc. Out of a total of about 3.3 million sq. km. land area in the country, around 1.4 million sq. km. are subject to soil erosion, while an additional area of about 0.27 million sq. km. is being degraded by floods, salinity and alkalinity. It has been further estimated that as a result of deforestation and poor land management in catchments of irrigation and hydro-electric projects, the rate of sedimentation is 4—6 times higher than what was assumed in the designs, thus reducing their life expectancy.

In the above context, it may be stated that the Sixth Plan has laid emphasis on the optimal land use in the country. For the purpose, a National Land Resources Conservation and Development Commission is being set up which together with the State Land Use Boards will assist in bringing about desired improvements in land and water management based on considerations of ecology economics, energy requirement and employment generation. ☐

Progress in Desert Development Programmes

AN AREA of over 44,209 hectares has been covered by afforestation under the Desert Development Programme (DDP) which is in operation in both hot and cold desert areas of the country. The programme covers 18 districts in the hot deserts including 11 in Rajasthan, four in Haryana and three in Gujarat. It also covers two districts of cold deserts in Jammu and Kashmir and one in Himachal Pradesh.

Besides, shelter belts in 25.600 kms. were also planted. About 1800 tube wells and pumps were energised and 493 villages electrified. Soil survey was also carried in an area of 59,000 hectares and sand dune stabilisation work in an area of 9,359 hectares. An additional irrigation potential of about 4,000 hectares was also created. Added to this, 115 new veterinary dispensaries and 690 milk collection centres were set up. The programme also helped in the generation of employment of 76 lakh mandays.

A sum of Rs. 60 crores has so far been spent on the programme since its commencement in 1977-78. Out of this Rs. 45.23 crore was provided by the Centre and the remaining amount by the concerned States. The programme was initially a central scheme and from 1979-80 onwards the cost is shared equally between the centre and the states. The programme aims at an integrated development of the desert areas through optimum utilisation of its potential.

Biomass energy imperatives

The energy crises brought on by the oil price hikes and firewood scarcities have made imperative planned production of biomass, which is both a renewable and a most efficient provider of energy. An eminent botanist, who is now Secretary to the Government in the Department of Environment, examines the research and aevelopment effort for an ecologically souna cultivation programme.

T. N. Khoshoo

TWO important points emerged from the First Energy Crisis, in 1973. First all nations suddenly became aware of their total dependence on only one form of energy and realized that they were, in fact, living in a Petroleum Society. Secondly, it became clear that such a crisis would not have affected any nation if a broad energy policy, involving many sources, had been adopted. There then followed the Second Energy Crisis due to scarcity of firewood for cooking and heating. This crisis has been far more serious, as it affects a very large rural population in the entire developing world. In India, 68.5 per cent of the energy used in households is in the form of firewood and 64.2 per cent of it is collected from natural sources. For a variety of reasons, wood is still the principal source of energy in rural areas and nearly half of the world's wood production goes into its original use, i.e., cooking and heating. However, on account of population pressures, the demand for firewood has outstripped natural regeneration and planting, so much so that in some areas, though there is food to eat, not enough wood is available to cook it. At present, there is a big gap between demand and supply of firewood, resulting in depletion of the forest cover which, in turn, has proved to be ecologically disastrous as it leads to floods, soil erosion and, ultimately, shortage of water.

One of the importat methods of insulating the country against such an impending disaster is to take to the Photosynthetic Model of Development through large-scale use of biomass, particularly firewood. Such an option, apart from meeting energy needs, would help to restore the relationship between man and his environment. Therefore, a very massive tree plantation programme is necessary both for energy needs and overall eco-development.

In our country, the shortfall in firewood production by 2000 AD has been estimated to be of the order of 137 million tonnes, which would require 34 million hectares of land, at about 4 oven-dry tonnes of wood per ha/year, and a minimum annual outlay of Rs. 500 crores for 17 years, to be made good. Once such a programme is successful, dung and plant-based residues would become available as organic fertiliser and as industrial feed stock respectively.

Among the renewable alternatives, solar energy, captured by the plants through the process of photosynthesis, is the most important, especially because the photosynthesis is a key process in the life- support system of this planet. Furthermore, the plant-based energy systems are not only renewable but they remove carbon dioxide from the atmosphere before turning it back, with no overall quantitative increase, as also help to contain environmental pollution. Photosynthesis is at the base of all biomass production and food chains. It converts physical energy into chemical energy and generates oxygen, the life-sustaining gas. While net photosynthesis uses only 0.1 per cent of sunlight, it produces organic matter of which only 10 per cent accounts for the total energy used by man and only 0.5 per cent accounts for the entire food requirement of the human race. Increase in photosynthetic efficiency automatically increases production of organic matter. Various types of biomass and/or bio-fuels available are : firewood; agricultural alcohols; vegetable oils : hydrocarbon plants, particularly those yielding rubber and petroleum-like materials; fresh water weeds; sewage-grown algae; algal hydrocarbons; and biological production of hydrogen using halobactoria, algae, azolla and even higher plants. Every feedstock or bioconversion process has its own merits and demerits, and the different routes available to generate solid, liquid and gaseous fuels are : anaerobic, aerobic and enzymatic digestion and thermochemical conversion.

Crucial Factory

The basic premise or raising firewood plantations is that firewood needs cannot and *should not* be met from the natural forest stands as it would reduce the forest area, which is now only 23 per cent in India, although 33 per cent is envisaged under the National Forest Policy Resolution of the Government of India, and the effective plant cover is only about 12 per cent. The destruction of our forests will not stop as long as fuel for cooking is either not provided free to the rural poor, or is not made very cheap. In fact, the time has come when we must plan for meeting timber and wood needs for industrial purposes from plantations captive to industry and not from natural forests. In order to obtain the maximum productivity of firewood in the minimum time, high-density and short-rotation biomass of fast and hardy species of deciduous trees and shrubs should be raised exclusively on non-agricultural or marginal lands, so as to avoid competition with food crops. The yields of firewood reported so far are indeed over-optimistic and there is a need to conduct meticulous scientific experiments, because estimated yields are a very crucial factor in planning firewood plantations or domestic use and or generation of electricity. The numerous advantages of large-scale firewood plantations range from the strictly local to environmental and social imperatives.

Land use

Another dimension to the problem is that the degraded lands proposed to be used or biomass production are at present used, free of cost, for grazing. If used for firewood biomass, such lands will have to be closed to grazing immediately. To meet the situation thus created, either tree species with a fodder value will have to be grown or fodder legumes and|or grasses will have to be grown in conjunction with firewood species.

The immediate research needs are :

(1) Tree|shrub species will need to be selected for wide genetic variation and adaptability to marginal or low nutrient soils. Thus, the selected species should be hardly and require low inputs of water, fertilizer and plant protective measures.

(2) The selection should be of species with multiple uses, like fuel, fodder, fertilizer and fibre and high regenerative potential and|or coppicing ability, without loss of vigour under conditions of competition; minimum amount of bark, wood with high calorific value and ability to burn without sparks and toxic smoke, etc.

(3) Nitrogen-fixing ability of the species would be an additional advantage, and other methods of biological soil fertilization for deficient soils need to be worked in view of the fact that high density and short rotation will cause a very high drain of nutrients from soil with hardly any litter fall available for recycling.

(4) Agro-technological package of cultural practices for individual species and specific habitats need to be worked out in combination with appropriate fodder legumes and/or grasses.

(5) Standardization of tissue-culture techniques for production on a mass scale in a very short time, of elite clones will be required to meet a very large demand for planting material (10,000 and above per hectare).

(6) Germ plasm collection of fall the relevant species and their variants will have to be made for purposes of location-specific adapttability trials as also for incorporation in breeding programmes.

(7) Breeding procedure for genetic upgrading for the parameters listed above will need standardisation.

Agricultural alcohol, though it successful transport fuel in Brazil, is not relevant to India as it may be more economical to use it as an industrial feedstock. Furthermore, it may be wise to displace sugarcane and|or tapioca as food crops. Sugarcane, besides, is now a 'political' crop. However, the future feedstock for alcohol is ligno-cellulose and research and develop-more economical to use it as an industrial feedstock it a commercial raw material. Similarly, although vegetable oils are a promising fuel for diesel engines, due to acute shortage of edible oils, as also their higher price than that of petroleum in India, these oils do not have an immediate future as fuel.

Hydrocarbon Plants

The new hydrocarbon plants, such as guayule and euphorbias, are hardy and most relevant to India and can be grown in arid regions. The demand for natural rubber is unabated, because it is preferred to synthetic elastomers; besides, the latter are based on petroleum feedstock. To meet a shortfall of 65,000 tonnes of natural rubber, guayule needs to be grown in over 26,000 ha. in arid zones by 1985.

Among the aquatic biomass, water weeds, like water hyacinth, common in water-bodies, are already being used. Sewage, though an environmental hazard, can be a source of biogas as also a culture medium for single cell protien for poultry. During the process sewtion and have a long-term potential.

Algae are a very promising source of hydrocarbons and deserve attention for production and processing by catalytic hydrogeneration. The whole area of marine biomass has been badly neglected and requires considerable attention in view of the fact that the sea constitutes about 71 per cent of the earth's surface.

Production of biological, hydrogen through biophotolysis, as also bio-electricity, involves the use of hydrogenase and halobacteria with purple membranes, respectively. Both of these merit considerable attention and have a long-term potential.

There is an urgent need to domesticate as also genetically upgrade all the new and upcoming energy crops, microbes and algae, which are at present wild and have low productivity per unit area, per unit time. This is only possible if there is a heavy input of high science. The area of biomass energy is indeed multidisciplinary and requires R and D in subjects like botany, phytochemistry, biochemistry, microbiology, agriculture, fuel research, heat physics, different branches of engineering, etc., on plants as alternate sources of diverse types of energy.

Energy policy

In general, energy requirements of the rural pool, who often have food but not enough fuel to cook it, have been so far neglected. In view of the acute shortage of firewood, they perforce poach on forests, plantations, etc. It is, therefore, necessary that, like other basic needs, such as food, shelter, clothing and medicare, energy for cooking and heating should also be considered a basic need and guaranteed by the State. This has become all the more necessary on account of the very wide regional disparity in energy use. In fact affluent nations are using energy in such a reckless manner as to lead to a highly disproportionate use of this finite resource and increased pollution. One way to meet this situation is to follow a broad energy policy in which many forms of energy are utilised, each supplying not more than 20 to 25 per cent of the total energy requirement. In a country like India, which has achieved food self-sufficiency to an extent, but is deficient in energy, the non-agricultural land will tend to be used for energy crops, in contrast with those countries which are deficient in both energy and food, and have little or no land to spare.

Obviously, biomass, agriculture and animal husbandry form an integrated and symbiotic system. To meet the energy crisis, and the increased demands for food, fibre and feed, the only option for our country is to widen our agro-forestry base. Since agriculture is indeed a dynamic, living and continuing system, the role of agro-forestry is to maintain land in a living and productive form so that human life is sustained for a very long time to come. While agricultural wastes|residues are a very valuable feedstock for biofuels which can be utilised in a number of ways for productive purposes, it is necessary not to collect all the available wastes|residues to enable natural soil enrichment by their degradation by soil-micro-organisms to continue.

Although even enlightened people think that wood is a fuel of the past, it has steadily been gaining in importance as a source of energy in developed countries, particularly important as it is for the developing ones. Since there are several economic, social and environmental advantages accruing from biomass, it must receive greater attention from policy makers, planners and funding agencies in the developing countries. Although biomass is a dire necessity for the developing world, there is greater awareness about its importance and R and D is in the developed countries. Obviously, in time to come, the latter would make far greater use of biomass than the developing world.

While biomass goes well with the social, cultural and economic milieu of the country, there is a wide difference between the perception of a villager and a national planner about the firewood crisis : the former sees it as a local problem and feels that wood is a gift of God and he has a right to it even by poaching; the latter sees it as a problem of denudation of forests, leading to ecological disaster. However, for the success of the programmes of firewood plantations, the most critical factor is the villager who is both their guardian and the end-user. Unless he is made aware of the dire implications or destruction of forests and plant cover in general and the fact that it is in his own self-interest to preserve and make rational use of the plantations, poaching will never stop. Associated with this is a need to evolve and popularise cooking stoves which are energy efficient and smokeless. The smoke itself sometimes contains materials which may be toxic. There has to be a mass awareness programme encompassing all aspects, with people's participation. For such participatory forestry programmes, there is needed, apart from the Forest Departments, a cadre of trained 'bare-foot foresters' who can work with the people.

Biomass may not be the panacea for all our energy problems but it will, no doubt, help to reduce substantially our dependence on fossil fuels. Being socially and environmentally relevant, biomass enables us to keep our air, water and land clean and manage our life-support system in a sustained manner. Two things are needed : first, in view of our country being predominantly agricultural, a perceptible till in favour of plants and plant sciences in our planning process by adoption of the Photosynthetic Model of Development; and, secondly, India has to be made increasingly greener.

The domestic energy problems, particularly of the rural community and the urban poor, in a developing country are, indeed, very complex. They are closely linked with poverty and inequality. There are no magic solutions, but, given a sustained commitment of the Government and the people, they are not insurmountable. If we do not give the highest priority to these questions now, the price we will have to pay will be colossal—ecological disaster and an economic crisis. Let us remember, good ecology is good economics.

—DEPTH news India

Uninterrupted supply for public distribution system

ALL-OUT EFFORTS would be made by the States and Union Territories to implement the Prime Minister's new 20-Point Programme, relating to expansion of the public distribution system in the country and continuance of strict action against hoarders and blackmarketeers, etc. This was decided in the third meeting of the Advisory Council on Public Distribution System which was held in New Delhi recently.

Shri Bhagwat Jha Azad, Union Minister for Food and Civil Supplies and Chairman of the Council who presided over the meeting said, that the Food policy of the Government had a coordinated character and had to be implemented with the fullest cooperation of all States and Union Territories. He informed the Council that out of the total production of foodgrain cereals in the country, the quantity procured for the Central pool was only around 12.5 per cent. The allocations made by Central Government for the public distribution system were thus limited to this small portion. The main responsibility regarding availability of foodgrains to the consumers was of the respective State Government, supplemented by the role played by the Central Government. In order to enable the Central Goverment to discharge its duties, it is expected that the Governments of the producing States would continue to extend all help in maximising the procurement of foodgrains.

The State Governments were assured of a smooth and uninterrupted supply of the seven commodities which are given by the Centre to the States for public distribution. These are what, rice, levy sugar, imported edible oils, kerosene, soft coke and controlled cloth. ☐

(Continued from the previous issue)

Rural industrialisation in India-2

The country has recorded satisfactory gains in per capita income and moved forward in the process of industrialisation, but the pattern of employment has remained virtually unaltered. Efforts have been made to promote small scale and cottage industries. In order to make the rural industrialisation programme an effective instrument for ameliorating the rural poverty it is necessary that output, employment and technological appropriateness for the sector are well harmonised.

Hari Dev Goyal

Besides the sectoral programmes mentioned so far, a few programmes of rural industrialisation have been taken up from time to time during 1960's and 1970's with a view to create employment opportunities in rural areas or benefits certain target group to lift them above poverty line. Particular mention may be made of Rural Industries Project (RIP) programme, Rural Artisans Programme (RAP), Industries Component of the Integrated Rural Development Programme of the Integrated Rural Youth for Self-employment (TRYSEM). Brief sketch of these programmes is presented below :

Rural Industries Project

The third five-year plan (1961-66) initiated a pioneering development programme with regard to rural industrialisation. As a centrally sponsored scheme the rural industries projects programme was launched in 1962-53 The basic objectives of the programme include enlarging employment opportunities, raising the standard of living of rural masses reducing exodus to cities, reducing inequality of wealth and income, eliminating regional economic imbalances and securing social justice Under this programme the industries were to be based on locally available raw materials and rural manpower. Promotional activities undertaken in the project areas comprised provision of training in improved technique of production provision of common facilities, services for selected industries and financial assistace on liberal terms Initially 45 selected areas with different socio-economic conditions, each with three to seven community development blocs having a population of 3 to 5 lakh persons, were taken up To assess the spread effect of heavy industries, four more areas near large public sector undertakings at Bhilai Durgapur, Ranchi and Bhadravati were added to the programme in 1965.

The number of projects increased from 49 in 1965 to 111 in 1975-76 RIP projects covered an entire district excluding towns with more than 15,000 population as per 1961 census or 25 000 as per 1971 census. Industries were first set up in growth centres which are the focal points where reasonable infrastructure and sufficient resources are available

During the Fifth Plan, 57 more districts were taken up for RIP. Intensive campaigns were organised in the Project areas to identify prospective entrepreneurs and provide them all possible assistance. It was decided to reserve 15 per cent of the scarce indigenous and imported raw materials earmarked for small scale industries, for units in RIP areas. Steps were taken to ensure close coordination with the activities of KVI Commission, Rural Electrification Corporation and other concerned developmental agencies.

RIP was evaluated by Programme Evaluation Organisation of the Planning Commission On the basis of the evaluation study made available in May, 1976 certain guidelines were given by the Government of India. Major among them were :

(i) The area of operation will cover the entire district excepting towns having a population of more than 25,000 according to the 1971 census.

(ii) Rural industrial development centres are to be selected and assisted according to the criteria of availability of local raw materials and concentration of local skilled workers|artisans and other potentialities including infrastructure for development of village-based industries.

(iii) It was observed that the Industrial Potentiality Surveys conducted before the inception of the projects require qualitative and quantitative modifications based on market conditions and other factors as they emerged from time to time The range of activities as well as candidate industries would cover the entire complex of the industrial development of the district for which the Project officer is responsible in his capacity as District Industries Officer In implementing the programme, each Project officer would also identify inputs as well as assistance proposed to be provided from other programmes including those relating to Rural Artisans, Khadi and Village Industries and small scale industries being provided by other agencies including banks

(iv) Other guidelines related to motivating the entrepreneurs, marketing assistance and mobilisation of resources through financial institutions.

Rural Artisans Programme (RAP)

This target group oriented programme was taken up as a part of scheme of Small Farmers Developmental Agency (SFDA)|Marginal Farmers and Agricultural Labourers (MFAL) launched by the Ministry of Agriculture in 1971-72. The programme is in operation in 41 of the RIP districts and is a central programme. RAP is an exclusive programme for the development of rural artisans. The main objective of the RAP programme is to provide all-round training to the village artisans in different trades so that they are in a better position to take up small enterprises and work with improved tools with a view to meeting the local demand of the areas and also to enable them to enhance their income. Under this scheme, provision has been made to provide these artisans when under training a stipend and subsequently a free tool kit and subsidy at 33⅓ per cent on the capital cost if they start a unit. With a view to ensuring that the training programme caters to the felt needs of the area, the Rural Artisan Programme was transferred to Rural Industries Project Organisation with effect from April, 1974. Besides providing training in traditional crafts, such as carpentry, blacksmithy, pottery and repair of agricultural implements, etc. new training programmes were introduced in modern trades such as manufacture of electrical motors, pump sets, granulated fertilisers, tractor repairs, sheet metal works, etc. No statistics are available as to the number of artisans assisted under RAP or the number of industrial units set up or the extent of employment opportunities created through this programme.

IRD & TRYSEM

Integrated Rural Development Programme was launched in 1978-79 in 2350 development blocks all over the country but was subsequently introduced in all the blocks.

The principal objectives of IRD are elimination of unemployment and under-employment and eradication of poverty in the rural areas. While substantial additional employment opportunities can be created through agriculture and allied programmes it is recognised that considerable diversion of the surplus manpower from the farm to the non-farm sectors is imperative.

The planning strategy for the rural industries sector aims at providing reasonable income to the rural artisans and a substantial increase in employment opportunities. Measures have to be undertaken to improve the income of existing artisans so as to enable them to cross the poverty line. At the same time, new artisans and entrepreneurs have to be brought into being. This calls for an integration of the beneficiary-oriented schemes with the overall plan which is drawn up after taking the resource endowments of the area into account.

IRD has adopted the family as its unit of planning. The objective is to make the family economically viable and the present concept of viability lies in its crossing the poverty line. This is based on the assumption that an income of Rs. 300 to Rs. 350 per month should accrue to a family of 5 to 6 members, i.e. about Rs. 60 per person per month. 100 families per block per year would be assisted under this programme.

The national scheme of Training of Rural Youth for Self Employment (TRYSEM) was initiated with effect from 15th August, 1979 with the principal objective of removal of unemployment among youth. The main thrust of the scheme is on equipping rural youth (18—35 years age group) with necessary skills and technology to enable them to take to vocations of self-employment.

The strategy for training of the youth is that apart from institutional training, training can also be given through local servicing and industrial units, master craftsmen, artisans and skilled workers. During the period of training, a stipend upto Rs. 100 per month is given to each trainee besides another sum of Rs. 100 for raw materials for the course. On completion of the training, the artisans are helped in setting up of the projects by advancing margin|seed money upto a maximum of Rs. 5000 as loan by the government. Each block in the country is required to train a minimum of 40 persons under TRYSEM on an average every year.

Upto July 1980, 7,256 families were assisted under industries component of the IRDP. Out of these 5,106 families received assistance for setting up village industries, 1880 families in sericulture sector and 270 families for bee-keeping activity. During 1979-80, 23,596 rural youth were trained under TRYSEM and out of them only 4178 got self-employed showing thereby that many youth do not possess entrepreneurial capability to start their own project despite all incentives from the government. During period of unemployment, they are attracted by stipend otherwise they still run after white-collar jobs.

Small Scale Industries

Various criteria have been applied for the demarcation of industrial concerns by their size. Among them the most important are: (a) the amount of capital invested, and (b) number of people employed.

At one time, the government grouped small scale industrial undertakings into two categories—those using power but employing less than 50 persons and those not using power but employing less than 100 persons. All small scale enterprises, however, had a capital investment of less than Rs. 5 lakhs. The criterion of number employed, however was considered deceptive as the figures of 50 and 100 persons were purely arbitrary. Later on in 1960, the small scale enterprises were defined as undertakings with a fixed capital investment of less than Rs. 7.50 lakhs and ancillaries with a fixed capital investment of Rs. 10 lakhs. Later modification of the definition in 1966 only reduced the items to be included in evaluating the capital investment. In 1975 the government revised the definition of small scale enterprises so as to include all industrial units with a capital investment in plant and machinery (fixed capital) of not more than Rs. 10 lakhs irrespective of the number of persons employed and Rs. 15 lakhs in the case of ancillary units, engaged in: (a) the manufacture of parts, components, sub-assemblies, toolings or intermediates; or (b) the rendering of services; and supplying or proposing to supply or render 50 per cent of their production or the total services, as the case may be, to other units for production of other articles; provided that no such undertaking shall be a subsidiary of, or owned or controlled by any other undertaking.

Within the existing definition of the small scale sector, there will be a tiny sector comprising units with investment in machinery and equipment upto Rs. one lakh and situated in towns and villages having a population of less than 50,000 (1971 census). These units will be entitled to special attention in matters of margin money and other assistance.

In July 1980, in order to boost the development of small scale industries and to ensure their rapid growth, government decided to increase the limit of investment in case of tiny units from Rs. 1 lakh to Rs. 2 lakhs; in case of small scale units from Rs. 10 lakhs to Rs. 20 lakhs; and in the case of ancillaries from Rs. 15 lakhs to Rs. 25 lakhs.

Small scale enterprises can be further divided into two main types, namely small scale enterprises and cottage industries. The basis of classification between the two is that in cottage industries, there is the predominant use of manual processes which is not true of small industrial concerns. Further, the cottage industries are mainly traditional industries and use traditional methods to make traditional products. They are "almost entirely household enterprises (employing little or no hired labour); most of them derive their raw materials from local sources; and they sell most of their products in local markets. They are, in sum small scale, rural, localised and technically backward". (P.N. Dhar & H.F. Lydall in the "Role of Small Enterprises in India Economic Development"). Thus, the distinction between small scale and cottage industries rests on the mechanical (or manual) processes and the range of geographical covering for deriving inputs and selling their output.

Since Independence, the Central and State Governments have adopted many promotional measures for the development of small scale units. Of course, the motivation towards the creation of small industries has been made the State Govt. responsibility.

Among the institutional measures, as already mentioned, the Small Industries Development Organisation was set up at the national level in 1954. SIDO acts as a policy formulating, coordinating and monitoring agency for the development of small scale industries. It maintains close liaison with the Central Ministries, Planning Commission, State Governments, financial and promotional institutions concerned with the development of small industries. SIDO provides a comprehensive range of consultancy services and technical, managerial, economic and marketing assistance to the small scale units through its network of Small Industries Service Institutes, Branch SISI's Extension Centres, Regional Testing Centres, Footwear Training Centres and Production Centres.

At the State level, Directorate of Industries, Small Industries Development Corporations, Financial Corporations and District Industries Centres are concerned with the promotion and development of small scale and village industries including registration of units, development of industrial estates, allotment of industrial plots|sheds to entrepreneurs, supply of raw materials, arrangement of credit, technical guidance and marketing facilities.

Among the promotional measures taken at various times during the planning period the following need mention :

(i) In order that the decentralised sector could acquire the vitality for becoming self-supporting, certain bolstering process had initially been extended to this sector like reservation of certain items, spare-parts and components distinctly for production by the small scale sector. Items included in the reservation list increased from 121 in 1967-68 to 807 in 1977-78. The number of items reserved was 832 in December, 1981.

(ii) In the past there has been constraint of availability of finance to small industries despite the adequate net-work of financial institutions. Considering the vital role of small industries within the Indian industrial economy, the total amount of loans granted to small industries forms a very small part of the total loans to Indian Industry. Of course, after Bank nationalisation, the picture has changed. On June 30, 1969, the share of small industries in the total advances from public sector banks to agriculture and hitherto neglected sectors worked out to be 8.3 per cent and it rose to 13.2 per cent in June 1980.

(b) The Reserve Bank of India evolved a Credit Guarantee Scheme to help small industries in 1960. According to the scheme, the Reserve Bank takes upon itself the role of a guarantee organisation for the advances which are left unpaid including interest overdue and recoverable charges. Not only working capital but even advances for the creation of fixed capital are covered under the scheme. Loans sanctioned on the basis of guarantee aggregated to Rs. 7.6 crores in 1961-62 and totalled upto Rs. 2,440 crores at the end of March, 1978.

(iii) Other promotion measures include supply of indigenous raw materials through Small Industries Development Corporations in the States to the permanent registered units and issue of import licences for raw materials of certain value, technical assistance through testing centres, service institutes and common facility workshops, marketing assistance through Government's Store Purchase Programme under which small units are eligible for price preference upto 15 per cent in the quotations and facilities for exports.

(iv) Special incentives and facilities are available for development of small scale industries in 246 backward districts. These include 15 per cent capital subsidy on fixed capital investments in 102 selected districts with a ceiling of Rs. 15 lakhs, transport subsidy equivalent to 50 per cent of the transport costs of raw materials as well as finished products for all new industrial units in selected remote and hilly areas, liberal and preferential treatment regarding import of machinery, raw materials and components, credit facilities on concessional terms and registration of new units for twelve items banned in other areas.

As a result of the efforts of the Small Industries Development Organisation, the growth of the small industries in the last 30 years or so, has in fact been impressive. We do not have reliable figures regarding small sector for 1954 when the SIDO came into existence. A system of voluntary registration of small scale units was initiated only in 1960 when 42,000 small units registered themselves. This number increased to 3,21,000 in 1978 giving employment to 32 lakh persons and accounting for a production of Rs. 8,500 crores. Apart from registered units, there are a large number of unregistered units. It is estimated that the total number of small units (both registered and unregistered) coming under the purview of the SIDO increased to more than 5 lakhs in 1978-79 involving a work force of 59 lakhs people and a gross production of Rs. 15,700 crores constituting almost 40 per cent of the total industrial production in the country. Even more than the increased production, the diversity of products and equipment made in the small scale sector has, in effect, been spectacular. Today the small scale sector produces TV sets, electronic instruments, control systems, chemical and intricate mechanical parts.

Achievements and Failures

The main objectives of the programmes for the development of rural industries during the 30 years of planning were to create large scale employment opportunities, promote decentralisation and dispersal of industries, complete statistical data for these industries particularly the traditional rural industries is a handicap for assessing the physical progress of the development programmes undertaken to achieve the objectives. However, according to the available data, fuller and additional full-time employment generated in most traditional industries was not upto the expectations.

Employment figures for 1950's were estimated by Karve Committee in 1954-55 (P. 82 of the Report). According to the Report document 34.65 lakh persons were employed full time and 14.00 lakh had seasonal and part time employment, in traditional industries.

In 1979-80, traditional industries provided employment to 132.84 lakh persons on full time and part time basis which showed that not even one per cent of the incremental labour force could be absorbed by the traditional industries over this period of two and a half decades. Of course progress of small scale industries in generating employment has been satisfactory. This sector absorbed more than 65 lakh persons over this period and employment increased from 1.60 lakh persons in 1954-55 to 67 lakh persons in 1979-80.

Looking at the employment growth during 1960's on the basis of statistics obtained from 1961 and 1971 census, we find that the overall growth of employment in manufacturing industries has been extremely low, being 8.5 per cent compared with an increase of more than 20 per cent in the total workforce. This is reflected in the marginal decline of relative employment in manufacturing industries from 10.6 per cent in 1961 to 9.7 per cent in 1971. The more striking change, however, is the large absolute decline of employment in household industry against an annual increase of 4.3 per cent in workers in the non-household manufacturing industries (small, medium and large scale). The share of household industries in workforce slided from 6.4 per cent in 1961 to 4.6 per cent in 1971. In fact, if we exclude the employment in factory sector from the total workforce in manufacturing industries, we observe that employment in unorganised manufacturing industries (traditional rural industries) remained nearly constant in absolute terms and recorded a substantial decline in terms of its share in the total workforce. The number of workers in rural household industries declined from 9.9 million in 1961 to 8.6 million in 1971.

The data for traditional as well as modern small scale industries for more recent years compiled by the Planning Commission shows that employment in traditional industries increased from 12 million in 1973-74 to 14 million in 1977-78. The number in handloom industry which is the largest single employer, however, registered a modest rise from 5.2 million to 5.7 million. Empolyment in small industries including industrial estates rose from 3.58 million in 1973-74 to 5.89 million in 1977-78. These figures are, however, unadjusted aggregates of full time and part-time workers. One may, however, hazard a guess that employment in these industries has remained more or less stationary or, at best, shown a small increase.

Coming to the production of consumer goods, the increase in the volume of production of some traditional industries was quite insignificant. Production of Khadi decreased from 85 million square metres in 1965-66 to 72 million sq. metres in 1977-78 though in value terms, there was an increase of 250 per cent from Rs. 26.81 crores in 1965-66 to 64.10 crores in 1977-78. Production in handloom sector was almost stagnant at 2300 m. metres over the period from 1970-71 to 1978-79. So increase has been recorded in the value of traditional industries' products because of general inflationary trends in the economy. This also shows changes in the taste of the people in favour of products from the factory with the increase in per capita income.

Another objective for development of rural industrialisation is their dispersal that helps in reducing regional imbalances. It is difficult to measure exactly which regions have benefited more by rural industry or whether all industrially and agriculturally backward regions have been benefited or not As far as modern small industry is concerned, there has been in 1980 heavy concentration of small enterprises in five States viz. Maharashtra, Tamil Nadu, West Bengal, Uttar Pradesh and Punjab a position that existed in 1950, while the States of Orissa, Assam, Rajasthan, Jammu and Kashmir which lagged behind thirty years ago, even now were not keeping pace at all. There are certain benefits woven into the policy for development of rural industries but these have been taken away by large scale enterprises.

(1) The census of Small Scale Industries (1973-74) revealed that whereas 2.58 lakh units were registered with the State Directorates of Industries, only 1.4 lakh units were in actual operation. One obvious conclusion is that nearly 50 per cent of the units in the small scale sector were bogus. Most of these units have been created on paper by large enterprises to secure benefits for which small scale units are eligible.

(2) Despite of the reservations, the past experience reveals that though tooth-paste was reserved for small scale sector in 1969, even after more than a decade, 90 per cent of the tooth-paste consumed in the country is produced by multinationals. Same is the case with footwear, domestic appliances, safety matches, soaps and detergents—reserved in 1967—but still in all these items, large sector dominates the market.

(3) In some SSI units, the big business operates on the putting out system in which traders provide raw materials and purchase the finished products from the rural artisans or small units. A few notable examples are the handloom, sports goods, footwear and bidi manufacture. The 'BATA' purchased about a crore pairs of footwear from small units in 1977. These pairs were sold under the brand of BATA. Thus, the big units continue to thrive and earn super profits by making use of their market power at the cost of small units.

As far as institutional support is concerned, setting up of District Industries Centres in the country in 1978 provided long-felt need of a single institution at the district level and was a welcome step. By March 31, 1980, 382 DICs were set up but Action Plans for industrialising the districts on the basis of availability of skills and surplus resources and for their utilisation and development requirements of various inputs including financial, entrepreneurial for employment and production potentials separately for artisans based activities and tiny and small scale units, were prepared only by 220 DICs. More important need was the development of proper linkage of State and Central institutions and meshing of the activities of DICs with those of other institutions concerned with the decentralised industrial sector but that was not achieved to any noticeable extent. Nor fuller integration of the DIC programme with Integrated Rural Development programme and other programmes having impact on the development of small and cottage units was made. Of course two years' period (May 1978—March 1980) was too short a period to achieve all such results.

Rural Industrialisation in India in Sixth Plan

The current Five Year Plan (1980—85) has provided Rs. 1780.5 crores for village and small industries which accounts for 1.8 per cent of the total outlay in the public sector. The Plan document mentions in a categorical manner : "Promotion of village and small-scale industries will continue to be an important element in the national development strategy because of its very favourable capital output ratio and high employment intensity". With this end in view, the Sixth Plan lays down the following objectives of this programme :

(i) improvement in the levels of production and earnings, particularly of the artisans, through measures like upgradation of skills and technologies and producer-oriented marketing; etc.

(ii) creation of additional employment opportunities on a dispersed and decentralised basis;

(iii) significant contribution to growth in the manufacturing sector through, inter alia, full utilisation of existing installed capacities;

(iv) establishment of a wider entrepreneurial base through appropriate training and package of incentives;

(v) creation of viable structure of village and small industries sector so as to progressively reduce the role of subsidies; and

(vi) expanded efforts in export promotion.

The annual compound growth rates of production of rural industries during the sixth plan has been targeted at 8.2 per cent, employment in this sector is expected to expand at the rate of 6.7 per cent and exports at the rate of 10.6 per cent. These programmes are aimed at improving the level of production and creating additional employment opportunities especially in dispersed areas.

The growth rate of the village and small industry sector as a whole for 1973-74 to 1979-80 was 24.43 per cent per annum against the contemplated rate of growth of only 9.39 per cent per annum during 1980—85. The Sixth Plan therefore seems to assume a high rate of deceleration in the growth rate of VSI sector which probably would put to jeopardise all our efforts for poverty elimination in rural areas.

The weaknesses of planning exercises for different groups of traditional and modern small scale industries from the point of view of employment generation have been highlighted by Bepin Behari in an article that appeared in Economic Times on 29-10-1981. The relationship between the average annual rates of growth in the output and employment for the two periods under consideration has been worked out in the table below :

Table : 3—Average Output Elasticity of Employment in different sectors of VSI.

Sectors	1973-74 to 1979-80	1977-80 to 1984-85
A. Traditional Industries		
(i) Handicrafts . . .	0.38	0.68
(ii) Handlooms . . .	0.17	1.00
(iii) Village Industries . .	0.52	0.42
(iv) Sericulture	0.31	0.40
(v) Coir	0.27	1.03
(vi) Khadi	0.15	0.36
Total (A)	0.29	0.74

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Our choicest trees

The success of an agroforestry system, will largely depend on the selection of suitable trees and agricultural crops which are compatible enough to be managed as a single functional unit to harness optimally the desired benefits. The author says that while no single tree may be a panacea to all the problems choice, for multi-purpose trees like 'leucaena leucocephala' *may be of much appropriation in more efficient land-use management systems.*

Ashok: K Raina

THE PRESSING DEMANDS of food, fodder and fuel wood (FFF) have been primarily held responsible for accelerating such activities like shifting cultivation and deforestation leading to the denudation of forest wealth and creation of a number of resultant environmental hazards. Therefore, the major objective of the new forestry developmental projects has been the evaluation of such agroforestry systems which have the potentialities of augmenting the benefits from both agriculture and forestry to provide FFF and other forest products and at the same time conserve the ecosystem by simulating or partially recreating the more favourable edaphic and micro-climatic conditions.

The success of an agroforestry system, will largely depend on the selection of suitable trees and agricultural crops which are compatible enough to be managed as a single functional unit to harness optimally the desired benefits. Since most of our present high yielding agricultural crop varieties are raised essentially in monoculture, we are yet to evaluate or breed any good varieties which can fit well in an agroforestry system. Hence the only variable in the system remains the forest component, the tree, to be used in this admixture. In other words the productivity of an agro-forestry system will then depend on the choice of the tree species to be grown in a more or less conventional agricultural system.

Evaluation

Evaluation of the species characteristics to select the choicest trees for an agroforestry system has rarely been given enough thought. While the choice should have been for the objectivity, on most of the occasions, however, it seems to have given vent to over-enthusiasm to gain quick dividends for the very fact that hardly any valuable forest tree species has received such attention in the past as is presently given to some fast-growing species like Acacia auriculiformis, A. tortilis, Casuriana equisitefolia, Eucalyptus species, Leucaena leucocephala and a few tropical pines like Pinus oocarpa and P. carribaea. Out of these species L. leucocephala stands out prominently for not only producing fuel-wood and fodder but also adopting to the silvicultural practices of intensive management in land use systems of proven usefulness on the farmers field as well as in the foresters domain. While the species like A. tortilis and Casuarina equisitifolia produce good fuelwood within certain geophysical limits, A. auriculiformis, Eucalyptus and Pinus species are solely for the privileged, the paper and pulp mills.

Intensive forest management and utilization techniques, particularly the use of sorter rotations and whole tree harvesting, make increasing demands on the soil, resulting in adverse environmental impact on the fragile ecosystem. It is to be seen in this context whether the new system could, in the face of such exploitation, conserve the ecosystem and still satisfy the farmers demands. Again we may have to admit that Leucaena leucocephala, when grown solely or in any agroforestry system, not only fulfils the demands of FFF but improves soil fertility by high nitrogen fixing ability, rapid vegetative growth and ability to regenerate naturally or respond to methods of artificial regeneration. On the other hand while many of the fast growing Acacia species are very thorny, the leaves of thornless. A. auriculiformis have tannin content too high to be admissible in fodder. Again while coppicing or pollarding of species like A. tortilis and A. catechu may not be desirable, because of the menace of roof-rot problem due to Ganoderma leucidum. A. auriculiformis is not only a poor coppicer but in the face of weed competition, its establishment by direct seeding is difficult. Contrary to it L. leucocephala regenerates so fast that the coppice shoots can be harvested regularly, on every 40 days interval, throughout the year for supply of palatable green leafy fodder. Unlike L. leucocephala, the natural regeneration of A. auriculiformis is very poor under shade.

Arid and Semi-arid Areas

Arid and semi-arid areas present the worst examples of resource degradation wherein the need of afforestation is most urgently felt. The development of long taproots supported by laterals and shedding of leaves or trees remaining leafless for long periods help the better establishment of trees under evapotranspirational stress, like Acacia tortilis, A. senegal, Albizia lebbek and Leucaena Leucocephala A auriculiformis cannot tolerate long periods of drought and high temperatures possible of more lateral roots which are closer to soil surface.

While looking for more favourable plant characteristics for suitability in agroforestry systems the poor plant habit with widely branched architecture of species like A. auriculiformis and A. tortilis becomes a serious limitation because of the disadvantages

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Brandt's second message

North must come forward to accept the interdependence thesis and translate the same in concrete terms, which in turn will improve the bargaining power of the South. South should make a beginning by greater cooperation within South, which seems to be Brandt's second message.

Satish Jha

When three years ago the Brandt Commission submitted its first report, oil prices were still rising, the OPEC nations' surpluses booming and the world was yet to witness the worst of a recessionary phase.

At the time of is second report—Commission members prefer to call i a memorandum—things have changed remarkably with oil prices looking downwards, the North eagerly looking forward to a new phase of recovery which has been eluding it for long, OPEC nations facing current account deficits and an international financial crisis hitting the North.

Predictably the two reports had to be different in their emphasis if not tenor. Moreover the members of the Commission were expected to have become wiser from the experience of post-report events particularly developments at Cancum summit and after. Yet, all these offered little room for novel ideas emerging on North-South co-operation. And the second report of the members of the erstwhile Brandt Commission proves just this.

Financial crisis

If the first report offered a long-term perspective on the issues that called for greater international co-operation the second report has addressed itself to the immediate crisis afflicting particularly the North—the financial crisis brought to the fore by the Mexican experience and reinforced by Brazil and Argentina. It does not discard the need for negotiations on abolition of hunger, energy sharing, improved trade practices but puts the current financial crisis as the priority issue to be resolved immediately.

On how this crisis has come about, it unequivocally blames the response of the North to the proposals put forward in its 'Programme for Survival'. This is taken as a vindication of its earlier stand for an urgent need for North-South co-operation. The crisis, for the members of the independent commission, only reinforces the interdependence between the two halves of the globe. It follows that unless this mutuality of interests is recognised by both and a common solution evolved to tide over the "common crisis", the world might as well collapse. The report minces no words in taking an extremely alarmist view of the current situation. Crisis, it argues, induces contraction. Which in turn worsens the crisis. This is how, according to the memorandum, the world—particularly the North and through its control over the international institutions such as the International Monetary Fund, the World Bank and even the world market—has responded to the current crisis. But, this has meant contraction of everything—of out-put, of employment and ultimately of growth.

Rationale of IMF prescriptions

So it questions the rationale of IMF prescriptions, of Reaganomics and Thatcherism, of monetarism in general. Instead, it is suggested that what is needed urgently is to go towards reflating the economies, not only of the North, but a global reflation. And there is a good reason to back it. For those who prescribe the monetarist pill to overcome an inflationary bout know little what it means to contract the consumption basket of an already starved man. Deflationary policies for the writers of the memorandum are the medicines which may at best suit only North, but at the risk of plunging the rest of the world into a deeper crisis.

But, more than its recommendations on restructuring international monetary system and on other issues such as food, energy and trade, the pragmatism of the memorandum is reflected in its views on the negotiating process. Retreating slightly from its earlier position (which converged with that of the developing countries) of sorting out most of the issue at the global negotiations under the United Nations framework, the members of the Brandt Commission feel that course to be of much less significance in dealing with the immediate crises that may develop from time to time. This assessment flows directly from the failure of the Cancum summit which in Mr. Brandts words "fell far short of expectations."

It is also critical of forming various exclusive groups such as Group of 77, Group B and Group D which represent lobblies of developing, developed and the eastern bloc countries to the exclusion of the rest. In the Commission's recent view, this only impedes global co-operation. And, therefore, it suggests using the existing international fora to the best advantages by the South.

Meaningful multilateralism

Some of its members go a step further in advocating a kind of beginning to be made by bilateralism finally enlarging itself into a more meaningful multilateralism. All this is suggested to be achieved by reaching some agreement on various specific issues. This indeed marks a major departure from its past position in as much as there is an emphasis on specifics while still calling for a general solution. This movement from UN variety of verbiage in the first report to a mix of specifics complementing more general issues, is the essence of new pragmatism of the Brandt Commission members.

So now, the Brandt Commission memorandum, while not abandoning what were the primary issues of its Emergency programme 1980-85 namely large-scale transfer of resources to developing countries, an international energy strategy, a global food programme and some major reforms in the international economic system has come to place excessive emphasis on solving the present financial crisis. Mr. Brandt does mention that considering that annual world expenditure on armament alone is worth $ 650 billion against total accumulated debts of South at $ 630 billion, simply ending the arms race could more than take care of the Souths' developmental needs. But, this is also an issue where the North is least receptive to any suggestion.

The alternative then is to ensure a flow of cheap money towards the developing economies first—the major objectives to be attained in due course preferably in not too distant a future. A plea for such a transfer makes sense for this is precisely what the rich nations have been stalling over the years effectively. Though the crisis of the seventies, which the North sees as having been brought about by rising oil prices, was to have achieved this to a certain extent. Manipulations of the North saw to it that this objective was not achieved.

Cheap money

Initially through market mechanism, where liquidity loses its value if not utilised in the given framework, they mopped up most of these funds by what has come to be known as recycling of petro-dollars. The revenues of OPEC nations fund their way to the western banking system. Yet, what is being held by the North as the crisis is not just the temporary payments crisis they had to put up with, but the cheap money, no matter how small in comparision to that mopped by the North, that came to some developing countries.

Moreover, so much of sudden accumulation made money cheaper for a while-which is being argued as having done the maximum harm to the international financial system. Therefore, when the OPEC nations once again raised their prices after a real decline in oil price during 1974—79, the response of the rich nations was more through market manipulation. The US prime rates were kept deliberately high, rising three times in 1977—80 and attracting all the money towards North, particularly to its leader the US. But, the money had to be sent out and Brazil and Mexico were the obvious bidders.

It is the crisis created by these large borrowers-those who have acquired a nuisance value for the North by their increased capacity to damage the world financial system which still means the financial system of the North, no matter what criterian one adopts, that symbolises the current crisis.

Cooperation within South

The Brandt Commission's solution to it are : Improving the conditionalities on IMF loans, doubling its quota, more SDRS, more funds under the General Agreement to Borrow, more low conditionality finance etc. But the question is can one interpret the recent trend in international economic institutions, particularly that in the IMF of improving GAB and quota, as a genuine response to the crisis ? Any studied answer will veer towards a clear no. That is what many members of the Commission are afraid of. Said Mr L. K. Jha, a prominent member of the Commission, "if that is so it is unfortunate."

He does not seem to be of the view that either the Brandt report or its memorandum have had much to do with the recent trends of leniency in IMF. Does one then draw the lesson that it is essenially the leverage that the South may come to have which can be more critical in dealing with the North ?

Unfortunately, even the members of the North answer the same, in affirmative. In that case, the South apart from pleading must acquire some teeth too. This is the second aspect of the pragmatism of the Brandt memorandum in as much as it pleads for a greater dialogue within the South. That may help it acquire the necessary wherewithal. A common crisis is really common when both the North and the South perceive it to be so. The surest way to make a beginning in the direction would be that North comes forward to accept the interdependence thesis and translates the same in concrete terms, which inturn will improve the bargaining power of the South. And South on its part should make a beginning by greater cooperation within South. This seems to be the message of the new memorandum. □

(*Continued from page* 16)

associated with the shade effect like : (1) interception of precipitation by tree foilage and subsequent re-evaporation reduce available moisuture for the crop more so in arid regions, (2) few of the new crop varieties can tolerate shade, (3) mechanization of the underlying crop is hampered and (4) is more favourable for proliferation of fungal diseases.

Thus it may be concluded by saying that while no single tree may be a penacea to all the problems choice for multi-purpose trees like Leucaena leucocephala may be of much appropriation in more efficient land-use-management systems. □

(Courtesy : The BAIF Journal)

Transfer of technology

An extension experiment in Transfer of Technology project by the Indian Institute of Agricultural Research, New Delhi in village Holumbi Kalan has proved that the new high-yield technology was as much valid to the small and marginal farmers as to the big farmers. This shows, the author says, how the new approach can be adopted countrywide for improvement of the lot of the poor farmers which is one of the objectives of the new 20-Point Programme.

T.V. Satyanarayanan

It was a dream come true for Risalo, a mother of three children, owning a small piece of land on the outskirts of Delhi. The wheat crop in her field looked so bountiful that it could be the pride of any progressive farmer, big or small.

Standing cheerfully near her one-acre field, Risalo said she now raises two crops a year—rice followed by wheat. After keeping some grains to meet the needs of her family, she sells a small surplus in the Mandi nearby.

Risalo is one of a group of 90 landless agricultural labourers belonging to Harijan families in Holumbi Kalan village, who got land under the land-to-landless programme over ten years ago. However, the quality of the land they got was poor. As a result, these new owners of land were hardly able to raise a few quintals of coarse grains of wheat worth the name to meet their requirements. They remained by and large poor, deficit farmers, typifying the lot of millions of other marginal farmers in the country.

A miracle has now been brought about in their life-style thanks to an extension experiment by the Indian Agricultural Research Institute in Delhi. The Institute chose this village for its intensive transfer of technology project. The scientists of the Institute were keen to prove that the new high-yield technology was as much valid to the small and marginal farmers as to the big farmers, who it is commonly believed are the main beneficiaries of the Green Revolution.

The scientists began their project in this village seven years ago. They found that although the land in the village was uneven, unirrigated and partly affected by salinity and alkalinity, the farmers were receptive to new ideas and eager to improve their agricultural production. If the small and marginal farmers, with their limited resources, are to adopt the modern techniques of crop production, mere advice or education is not enough. At least in the initial stages, the farmers need full management support. The scientists, therefore, sought to establish a linkage with those agencies which provide assistance to this class of cultivators. Delhi Administration and banks, in fact, gave full cooperation to this project all through.

The first task of the scientists was to bring irrigation water to the fields. This they did by setting up a tubewell for which the Delhi Administration gave fifty per cent subsidy. Since the problem of salinity was not acute there, they found that mere land levelling and continuous irrigation was enough to tackle this problem. As a next step they arranged for supply of seeds of high yielding varieties and inputs.

The entire cropping pattern in the area has since undergone a change. The traditional crops like bajra, jowar and barley have been replaced by improved varieties of paddy in Kharif season, and wheat in Rabi. Besides, some farmers are growing an additional crop of berseem or mustard in small strips to augment their income. Both the yield and income of these farmers have more than trebled. In the process, they have also enhanced their social status.

One of the farmers in the project area said that the yield of a new scented variety of rice which he cultivated in his field in the last Kharif on the advice of the Extension scientists was as much as fifty quintals per hectare.

It has been estimated that on an average, the farmers in the project area require about 14 quintals of wheat and rice for their domestic consumption. On the other hand, the total average annual production from each one-acre plot there is 33 quintals, which means a modest marketable surplus of 19 quintals. The adoption of improved agricultural technology has, in addition, helped in augmenting the employment opportunities for these farmers and their family members.

The project has opened the eyes of poor farmers in the neighbouring areas as well. They are equally keen to adopt the new technology as was clear from a talk with an old farmer, Dalpat Singh. He wanted to know whether the scientists would be prepared to conduct Holumbi-type experiment in his village. The main problem in his village, situated in an higher area was water. He was sure the farmers in his village would be ready to give all co-operation to the scientists.

Probably, the scientists would take up Dalpat Singh's village as their next experimental project. In any case, they are winding up in Holumbi Kalan. They are convinced that the Holumbi farmers can stand on their own It is not their intention to give continuous support to any one group of farmers for an indefinite period.

The experiment of the Indian Agricultural Research Institute has far-reaching significance. It shows how the new approach can be adopted successfully in other parts of the country as well, for the improvement of the lot of small and marginal farmers, which is one of the objectives of the new 20-point programme. Even though in number the small and marginal farmers have 70 per cent of the land holdings in the country, they cultivate only 23 per cent of the cropped area. The dominance of our agricultural scene by small and marginal farmers will persist and even aggravate under the traditional pattern of land inheritance obtaining in our system. The yield of small and marginal farmers, has to go up several times to maintain their population.

In fact, these farmers form a section whose production potential has remained by and large untapped. The Holumbi farmer and a few others like him who are fortunate to have adopted the new technology bear witness to the actual potenial of this rich human resource. One has to see to believe the fine shape of crops in the small farmers' fields in Holumbi, presenting a strong contrast to the crops in the adjoining fields belonging to some bigger farmers, who probably have no time to boost the productivity of their lands. After all, the small and marginal farmer has also certain decisive advantages. His field, being small in size offers better scope for intensive cultivation and close attention. His only constraint is resources.

The Union Agriculture Minister has announced in the Lok Sabha that the Government has finalised a major programme of rupees 250 crore assistance to small and marginal farmers for this year. The programme will cover all the 5,000 blocks in the country. To be shared equally by the Centre and States, this programme envisages provision of subsidies and lumpsum allocations to help the weaker sections of the farming community to step up production and augment their income. While this is indeed, welcome, the provsion of subsidies by itself may not be enough.

We are reching a stage in our agricultural revolution, when a change in strategy is called for. Having reached a stage of near self-sufficiency and stability in production, greater thrust is needed to exploit the hitherto unexploited production potentials available in the country. Both research and extension will have to gear themselves up to the new task, with a new vigour and commitment. We may have to evolve a mechanism by which integrated supporting services can be provided to the millions of small and marginal farmers in the country, so that they would be in a position to boost their prduction and productivity. Agricultural scientists, extension workers, banks and other credit institutions, input manufacturers and development agencies have all to be deeply involved in this effort. If their activities can be properly coordinated and orchestrated for the service of the deprived sections of our farming community, we can herald a new phase in our socio-economic revolution. ☐

(Courtesy : All India Radio)

(*Continued from page* 15)

B. Modern Industries		
(vii) Small Scale Industries	0.34	0.63
(viii) Powerlooms . . .	0.16	1.04
Total (B)	0.33	0.66
(C) **Others**	0.02	0.61
Total (A+B+C)	0.23	0.81

Source : Bepin Behari : Sixth Plan & Village Industries, the Economic Times, 29th October, 1981.

It shows that the increase in employment was of the order of 0.23 per cent for one per cent increase in output during 1973-74 to 1979-80 which in 1979-80 to 1984-85 is expected to increase to 0.81 per cent. For the traditional sector it is expected to increase from 0.29 to 0.75 and for the modern sector from 0.33 to 0.66.

It is certainly laudable to contemplate increases in labour intensity especially in VSI sector of production but the various components worked in the table show a levelling down of the technique of production making it more primitive and giving premium to inefficiency. On the contrary, the Sixth Plan emphasises the need for "introducing structural orientation and adaptation of industrial fabric in a manner conducive to enhancing the productivity and the earning of the small enterpreneurs, artisans and craftsmen (p. 93). The data supplied in the plan documents show that the technological assumptions of village and small industries programme do not lead to improving their productivity. In order to make the rural industrialisation programme an effective instrument for ameliorating the rural poor, it is necessary that the output, employment and technological appropriateness for the sector are well harmonised. ☐

A TREE FOR
EVERY CHILD

Desert park in the Thar

G. C. Dwivedi

THE EFFORT to protect and preserve the eco-system of Thar desert with its fauna and flora has materialised in the setting up of a fascinating Desert National Park. The creeping sand-dunes interspersed with rocky plateaus, pebbly and saline barren flats with patches still rich in vegetation and animal life and variety to the typical landscape in the vast desert of Thar. Almost three years ago, an area of 3,162 sq. kms. of this desert land was set aside in Jaisalmer and Barmer district of Rajasthan to develop the Desert National Park for preservation and development of natural habitat.

The Indian desert extends to over 285 million sq. kms. of which about 196 million sq. kms. of hot desert is in Rajasthan. In the past, the flora and fauna of this land suffered a lot due to misuse and neglect by man. Continuous poaching and over-grazing by domestic cattle, without any period to recoup, had done much harm to it. Some of the rare species like the Great Indian Bustard, Chinkara, Black Buck and desert wolf were threatened with extinction. Therefore, the Government of India gave high priority to the development of a protected park, which could preserve the eco-system of the desert.

At present, the development of the park is in progress. An area of 155 sq. kms. is proposed to be fenced in the park during the Sixth Plan period. This area will be developed as Sanctum Sanctorum for the wild animals in their natural habitat. So far 40 sq. kms. of the area has been fenced and developped. The fenced areas are located at Sam. (1.100 ha.) Sudhasri (675 ha.). Miazlar (525 ha.). Phulia (400 ha.) Bandra (600 ha.) and Sundra (700 ha.)

The total financial outlay of the park for the Sixth Five Year Plan is Rs. 247 lakhs. Out of this, Rs. 67.47 lakhs were spent upto March. 1982 and a provision of 20-18 lakhs was made for 1982-83.

The steps taken by the forest department have helped in checking poaching and hunting in the area and has consequently resulted in an increase in the wildlife there. A clear difference can be seen in the free and undisturbed growth of desert vegetation in the fenced and non-fenced areas. Fencing and development of areas have provided ample food. shelter and freedom to the wildlife. The biggest achievement has been the breeding of the rare species like Great Indian Bustard in the park area and. in particular, in Sudhasri area. The breeding of Desert Fox has also been observed at Sudhasri, Phulia and Gadra Road.

Census of Wildlife

The latest census undertaken in 1982 in 135 sq. kms. of the desert park has put the number of Chinkara (Indian Gazelle) at 1,240, Desert Fox at 80, Desert Cat at 13, Desert Hare at 65, Monitor Lizard at 41, Mongoose at 46 and Hedge Hog at 68. The number of various species of birds like the Great Indian Bustard stands at 80, Sand Grouse at 455, partidges at 434, hawk (Falcon) at 134, vultures at 325, Egyptian vulture at 26 and peacocks at 631.

Desert Posts

To check hunting and cattle-grazing, continuous patrolling of the area by forest staff has been planned. For this purpose, ten desert-posts have been established at strategic points. Each post is being manned by one desert forester and desert guards. Camels have been provided to the staff for patrolling the area. It is proposed to equip the desert posts with wireless-sets so that instant communication may be possible in the inaccessible terrain.

Waterholes

Besides vegetation, water is a necessity if the wildlife is to survive and thrive. Water is scarce and occasional droughts have added to this scarcity. The forest department is, therefore, developing waterholes throughout the area under a phased programme. So far five 'nadies' and two guzzlers, man-made pools of water in natural surroundings wherein continuous flow of water is maintained through underground pipes, have been constructed. Work on six guzzlers and eight 'tankas' is in progress. In the coming years, another 16 guzzlers and 10 'tankas' will be constructed in this area. These will provide drinking water to wild animals.

A tourist 'dhani' (hutment) of local material and architecture is being planned near Sam village adjacent to the rolling sand-dues. Some rest-huts are also to be constructed in the interior areas of the park. All care is being taken not to disturb the harmony of the landscape and as such only local material is being used for these shelters.

Rust preventive steel

SOVIET SCIENTISTS have worked out a new grade of steel for railway wagons. Corrosion resistance of this new steel is twice that of the currently used steel varieties. Tests have shown that this metal is good for rolling the items necessary to manufacture those parts of railway wagons that are most vulnerable to corrosion.

In recent years, the design of many gondola wagon units has been substantially changed. The strength of some of these has gone up four to ten times. This has made it possible to raise their reliability and extend working life. The carrying capacity of each wagon has grown from 64 to 69 tons which enables railways to carry more freight.

(APN)

Sprinkler irrigation in Haryana

The sprinkler irrigation system is becoming popular in the arid zone of Haryana. The increased irrigation facilities due to saving in water losses has made cropping pattern more certain and the productivity has increased. As a result of installation of 8000 *sets upto March* 1882 *additional area of about* 14,000 *hectare has been brought under irrigation.*

Arjan Singh and V.K. Sharma

THE SOUTH-WESTERN region of Haryana State consisting of districts of Mohindergarh, Bhiwani, Rohtak, Hissar and Gurgaon are prone to chronic droughts and have unfavourable agro-climatic conditions like sandy texture of soil, undulating topography, poor ground water potential of usable water and deep water-table. In order to make best use of scarce irrigation resources in these areas, the Department of Agriculture recently embarked upon the introduction of sprinkler irrigation system

The State Government provided free demonstration on farmers' fields for complete two crop seasons and subsidy incentives, but the adoption of Sprinkler irrigation system in the State moved at a slow pace during the initial years of its introduction. But droughts of years 1978-79, 1979-80 and continued scanty rain-fall years thereafter helped in rapid adoption of this system.

Impact of Sprinkler Irrigation System

(i) Extension in Irrigation

The Department has carried out a study on Sprinkler Irrigation system, through Monitoring and Evaluation unit of the Department. The study revealed that due to introduction of sprinkler irrigation system the gross irrigated area of the sampled farmers had increased significantly from 1366—25 acres before installation of sprinkler sets to 2503—05 acres after installation showing an increase of 83.24 per cent. Similarly, the net irrigated area where the sprinkler sets were installed had also increased from 1089—25 acres to 1815—25 acres, showing an increase of 66.65 per cent

(ii) Cropwise details of irrigated and un-irrigated area

There was a sizable increase in cropwise irrigated area after installation of sprinkler sets are compared to pre-installation position. The irrigated percentage of crop-wise area had been pushed up from 51.61 per cent to 78.65 per cent after installation of sprinkler sets. The maximum increase occurred in case of gram, oilseeds and bajra crops. The irrigated area under gram had increased 83 per cent in the post installation period. Similarly, the irrigated area under oilseeds and bajra increased upto 87.98 per cent and 65.87 per cent.

(iii) Frequency of irrigation

It was further revealed that after the introduction of sprinkler irrigation system the frequency of irrigation in respect of all the major crops had increased. In case of wheat crop the frequency had increased from 5 numbers (before installation) to 7 numbers (after installation). The cropwise position is given in the following table :—

Crop	No. of Irrigation	
	Before Instal-lation	After Instal-lation
Wheat	5.05	6.95
Gram	1.35	1.80
Barley	3.53	4.30
Bajra	1.11	1.76

(iv) Cropping patterns

The important crops grown in the areas where sprinkler sets were installed were bajra and jawar in Kharif season and wheat, gram, barley and oilseeds, in rabi season. The details of cropping pattern of the seasons just before installation of the sets and Kharif 1980-81 and Rabi 1979-80 after installation were enquired from the sample farmers and are depicted below :—

S. No.	Crop	Percentage area to the net area shown	
		Before Instal-lation	After Instal-lation
	Kharif Crops		
(1)	Bajra	43.44	49.10
(2)	Jawar	1.80	1.98
(3)	Gawar	19.30	20.72
(4)	Cotton	1.70	2.44
	Rabi Crops :		
(5)	Wheat	32.02	46.92
(6)	Gram	22.22	20.72
(7)	Barley	7.26	8.68
(8)	Oilseeds	6.65	9.93
(9)	Ground-nut	—	1.07
(10)	Vegetables	—	0.08
(11)	Pulses	0.05	0.08
	Total	134.44	161.64

It is evident from the table that cropping intensity of the land where the sprinkler sets were installed had increased significantly over the year preceding the year when the sets were installed. The cropping intensity in these respective years had increased from 134.44 to 161.64 per cent. Kharif 1980-81 and Rabi 1979-80 were taken as the reference years after the installation of sprinkler sets. These seasons were severely hit by the drought conditions, otherwise intensity would have increased further. It is also a point to note that high shift had occurred in case of wheat, a more assured crop, which has increased from 32.02 per cent to 46.92 per cent in the cropped area. Marked difference can also be observed in area under oilseeds and cotton.

(v) Impact on productivity :

The system had also its impact on increasing the productivity of various crops grown in the area. The cropwise details of productivity with pre and post installation situation in the years referred to above are given as under :—

	Av. yield in Kgs./Hect.		
Sr. No. Crop	Pre Installation	Post Installation	Percentage increase/ decrease
(1) Bajra	697	833	+19.51
(2) Gawar	492	662	+34.55
(3) Cotton	699	704	+0.72
(4) Wheat	2661	2824	+6.13
(5) Gram	665	991	+49.02
(6) Barley	2409	2815	+16.85
(7) Oilseeds . . .	353	934	+9.50
(8) Overall	1238	1535	+23.99

It can be seen from the above table that sprinkler irrigation system has created a sizeable impact in increasing the productivity of all the crops grown in the area. There was a marked increase in the yield of bajra and jawar in Kharif season and gram in Rabi season. As already mentioned these two seasons were drought affected, otherwise the yield would have gone further. The overall increase in the productivity after the installaion of sprinkler sets was of the order of about 24 per cent.

It is, thus, evident that sprinkler irrigation system is a paying proposition in the arid-zone of the state. The study has revealed that it is a time and water saving device and the losses of water which is a scarce input, particularly, in this part of the state, are minimised significantly resulting in higher coverage of area under irrigation. The increased available irrigation facilities due to saving in water losses had not only made diversion in the cropping pattern from uncertain crops to more assured crops like wheat, but the frequency of irrigation to various crops had also increased substantially. This factor had positive impact on the productivity of various crops. Besides, additional available water had an impact on the intensity of cropping which had also been pushed up to a reasonable level. As a result of installation of 8,000 sets in this state upto March, 1982 additional area of about 14,00 hect. has been brought under irrigation without putting further stress on existing groundwater resources of the state. During 1982-83, another 2,800 Sprinkler sets are likely to be installed in the state. □

Merchant Navy Officer's training Facilities to expand

DIRECTORATE OF MARINE Engineering Training, Bombay at present trains about 120 graduate engineers each year. Taking into consideration the requirements of the industry, it has already been decided to increase the in-take of 200 engineers per year, as soon as the new complex of DMET buildings which are presently under construction, are ready, that is, by 1984. Similarly, the facilities at the Calcutta centre are also being augmented to permit an annual in-take of 120 in place of 100 at present. This was stated by the Minister for Shipping and Transport, Shri Vijay Bhaskara Reddy on the occasion of the Passing Out Parade and Prize Distribution Ceremony of the Directorate of Marine Engineering Training in Bombay recently.

Shri Bhaskara Reddy observed that the growth of Indian shipping since independence has had few parallels in world maritime history. From 59 ships totalling 1.92 lakh GRT, the Indian merchant fleet now stands at 407 ships of over 6 million GRT. This industry has all along developed on wholly nationalist lines. The public sector has also played a significant part in the development of the Indian merchant fleet and now accounts for more than half of our total tonnage.

Check on diversion of forest areas for non-forest use

THE DIVERSION OF forest land for non-forest purposes has been reduced to the barest minimum as a result of the control being exercised by the Central Government through strict implementing of the Forest (Conservation) Act 1980. A total area of 8,482 hectares of forest land was allowed to be diverted for non-forest purposes between October 25, 1980, the coming into force of the Forest (Conservation) Act 1980 and March 31, 1983.

This information was given by the Union Minister of State for Agriculture, Shri Yogendra Makwana in reply to a question in the Lok Sabha recently.

"Diversion of forest area for non-forest purposes is now allowed only in inescapable circumstances. States are also asked to compensate for the loss of forest area by raising compensatory plantations and taking up necessary soil conservation measures", Shri Makwana added.

Earlier on April 4, 1983, in reply to another question, Shri Makwana had said, "To provide for conservation of forests, the Forest (Conservation) Act, 1980, which lays down that the prior approval of Central Government is needed before any State Government or other authority passes any order dereserving any reserved forest or diverting any forest land to non-forest purpose was enacted. As a result, against average deforestation rate of about 1.5 lakh hectares per annum between 1951 and 1980, the rate has come down to about 3500 hectares per annum after the enactment."

IRD Programme's viability and rural poor—
—A case study of Bihar

The solution of the Integrated Rural Development Programme's deficiencies shall remain the necessary condition for improving its effectiveness and viability as a whole if rural poverty is to be eraaicated as can be seen through a case study of the implementation of IRDP in Palamu district of Bihar by a team of Agro-Economic Research Centre of Himachal Pradesh University, Simla.

Kanwar Prakash Chand

INTEGRATED RURAL DEVELOPMENT programmes are being carried out with the principal objective of reduction of unemployment|under-employment so as to eradicate poverty in rural areas. Realisation of this objective depends upon the quality of planning and organising, decision making, implementation, supervision and monitoring of the programme. A programme could be considered viable if it is able to achieve its objectives to the maximum possible without straining and incapacitating the means and resources of the various components of the total delivery system. Further, coordination and participation of the core components of the total delivery system is crucial for its success. Capital being the key to development, the role of banks is equally important. However, on account of increasing overdues in rural areas. The banking sector has become somewhat careful in financing. Its full cooperation and participation depends upon the solution to its major problems in development financing.

Viability, whether from the point of view of the programme or that of the bankers, ultimately boils down to the viability of the target group|units. In the prevailing situation where disparity in productive resources among the rural population is wide, solution to viability issue requires differential approach to be determined by the level of resources with the prospective beneficiaries. Potentially viable farms could be made viable with the adoption of suitable modern technology. But in non-viable farms, the production base in terms of land is so narrow that effects of modern technology cannot make them viable. Therefore, for such households other alterantive for increasing their income should be explored. Landless agricultural labourers, most of them having no land and capital or particular technical skill and knowledge, depend almost entirely on wages, raising them to the level of viability seems to be more difficult than the non-viables. So the objective success of any programme meant for the uplift of rural poors depends on how the viability is being understood and the extent to which it is operationalised.

In this paper an attempt has been made to analyse the extent to which 'Integrated Rural Development Programme' was able to achieve its poverty eradication objective. More specifically it envisages to study :

(i) How the concept of viability has been operationalised at field level. Whether it is viability of assisted units in terms of operational cost and benefits or it also considers the total family income deficit over poverty line i.e. the additional income required to break through the poverty line.

(ii) Gaps in programme's delivery system and their impact on the viability of assisted units.

Method and Material

To persue the aforesaid objectives, IRD Block where the programme was launched since its inception (i.e. in 1978) chose Palamau district of Bihar with abject poverty and tribal concentration therein. A complete list of activities and beneficiaries under IRD for the years 1978, 1979 and 1980 was drawn from Block records. To give fair representation to each category and activity purposive cum random sampling was followed. In all, 114 beneficiaries covering all the major activities given under the programme, were finally interviewed. Information at two points of time i.e. pre and post assistance period were recorded on a specially designed and pre-tested questionnaire. Supplementary informations, particularly repayment schedule as well as the actual payments for each household was collected from bank records. To analyse the factors responsible for viability|non-viability of the assisted units, discriminant function was used.

Beneficiaries Profile

Conceptually, IRD programme envisages identification of poorest among poors and arrange necessary funds from credit institutions for the package of activities suitable to their resource profile and which can generate enough sustained income to bring them to minimum socially accepted standard of living. For sustained growth the nature and type of the package of economic activities is simultaneously determined by resource profile of the prospective beneficiary, deficit in his income from the poverty line, existing skill and availability of needed infrastructure.

Sampled beneficiaries were provided with two types of economic activities, one where land was a necessary input viz. pumpset, persian wheel, bullocks and milch cattle; others non-land based viz. poultry, goattary, sericulture, rural artisans, etc. Small farmers (SF) were assisted mainly with land based activities whereas, marginal farmers (MF) were provided with both land as well as non-land base activities. Among landless labourers (AL) except milch cattle all the activities were non-land based. No beneficiaries was provided with more than one activity i.e. the package concept did not get any attention in the programme.

More than 13 per cent of the sampled beneficiaries were already above the poverty line (PL) at the time they received assistance; this proportion among SF was about 29 per cent. Average per capita income of marginal farmers and landless households was noticed to be below sample average. Disparity in per capita income of IRD beneficiaries was also more among these two groups. Around 58 per cent of the beneficiaries reported preference for additional activity to increase their total earnings. This figure stretched to the extent of about 73 per cent for marginal farmers. This indicates the extent of rigidity on the part of the executors in the implementation of Integrated Rural Development programme.

Programme's Viability and its Determinants

The viability of any development programme can further be elaborated as the fulfilment of its goals to the maximum possible without straining the resources of the different components of its total delivery system and that of the target group. Programme's delivery system could undertake to support and develop such economic activities which offer potential or commercial viability. Thus the actual issue will remain as the manner in which these two sets of activities are organised and interfaced. Perhaps, the interfacing would have to be done by a far better system of multilevel planning and leadership.

To understand, how the concept of viability has been operationalised at field level, following break up may be necessary :

(i) Viability from beneficiary view point : i.e whether the assisted activities have generated sufficient income to meet the operational costs as well as the due instalment of bank loan, along with a margin to the beneficiary.

(ii) Viability from bank view point; i.e. whether the assistance has produced enough income to honour the repayment schedule along with bringing the beneficiary to minimum socially accepted standard of living

(iii) Viability from programme view point : combination of (i) and (ii) and ability of the programme to reduce income disparity among different sections of the society.

It has been revealed that at 4 per cent rate of interest on loan component, the income generated by the IRD assistance was sufficient to meet the operational costs involved and annual loan instalment. Instalment load bearing ratio of the increased family income around unity for marginal farmers and landless labourers implies that increased income due to assistance could not make substantial contribution to narrow down the gap between per capita family income in pre-assistance period and poverty line. Ratio higher than unity for SF shows significant contribution of the increased income to narrow down this gap. With a 10 per cent rate of interest on the loan component, this ratio remained more than unity for SF but, went below unity for MF landless households. This suggests that assistance was not able to generate enough income to meet operational costs and annual due instalment of loan component. In other words at interest rate of 10 per cent or more, instead of helping the marginal farmers and landless households to improve their standard of living, the programme has increased their liabilities. This analysis at two levels of interest rate justify the differential interest rate scheme extended to rural poors. Conclusion arrived at in the preceding para further strengthens the results that higher proportion of SF have crossed the PL than MF and landless households. In view of smaller loan load bearing ratio of increased income in MF and AL, only those household (few in number) that were just below the minimum specified standard of living could cross the poverty line, whereas, the others (majority) continued to remain in distress poverty.

Discriminant function was used to identify the factors responsible for viability of assisted units in different categories of sampled households. In land-based activities, higher per capita income in pre-assistance period and working capital assisted units have shifted the SF and MF beneficiaries into viable group. Among SF, economic size of land holding has also contributed towards the viability In non-land based activities, only households having higher per capita income in pre-assistance and better returns could cross the poverty line. Higher and significant contribution of pre-assistance family income confirms our earlier contention drawn in the preceding paragraph.

To analyse the viability from bank point of view, again discriminant function was used to group beneficiaries into good and bad debts A comparision suggests no specific relationship between the earning capacity of the assistance, number of households those crossed poverty line and number of beneficiaries with good debts. Higher bank overdues with landless households may be because of their higher propensity to consume and diversion of credit to consumption; this meant more risk in recovery Even if they used the credit for production purpose, because of their higher propensity to consume, the incremental income may be used for consumption rather than repayment of credit. Comparision between small and marginal farmers presents an entirely different picture. Inspite of higher earning capacity and large number of viable units, bad debts were of a higher order in SF than MF beneficiaries. This may be because of more leakage of IRD assistance among SF. Those households were already above PL and used their social, economic and political positions to get assistance and are, therefore, intentional defaulters Poors repayment in other categories may be due to their higher propensity to consume, unprofitable technology, poor extension, lack of efficient market system, etc. Analysis of different factors for good and bad debts revealed that due to lack of forward and backward linkage returns remained at lower level, and resulted in an increase of bank overdues. The better repayment by MF is partly explained by their lesser ability to get away with overdues as compared to the otherwise powerful households.

It is thus concluded that most of the assisted units under IRD could not be converted into viable propositions and that the number of bad debts have also increased. Failure of the programme's delivery system to achieve viability from beneficiary and bank view point had adverse effect on the income disparity at micro level. This further indicates that in the absence of any loan liability, there was substantial reduction in per capita income disparity; but considering the loan liabilities, income disparity was noticed to have increased in each category as well as in the overall sample. Total sample, of course, showed little improvement in income distribution between pre and post assistance period.

Programme's deficiencies and impact on viability

Here, the purpose is not to repeat the conclusions derived earlier but to relate the findings with some of the major deficiencies of the programme. In IRD programme, the identification of the prospective beneficiaries which in turn determine the basic conceptual success of programme, was not properly understood by field level staff. As a result, when economic status of each beneficiary was compared with income criteria, around one-third of SF beneficiary households were found to be already above poverty line in pre-assistance period. This leakage of assistance may be due to deviation from the given income criteria for identification and continuation of the old land criteria followed under SFDA programme, of which IRD was an integral part in recent past. Consequently, the development funds meant for the upliftment of weakest section, were cornered by the better-off section of the society. Inspite of higher earning capacity of the better-offs, bad-debts cummulated substantially wihout caring for the economic and social cost of the confined funds to the society. Since credit is a crucial input for any development programme its active circulation is necessary to achieve the development goals. Therefore, confinement of development funds or its slow circulation must be checked by active collaboration of State agencies with the lending institutions at all levels.

Secondly, the effectiveness or the viability of a development programme depends upon the flexibility in its implementation, i.e. the adjustment of the programme with local resources and environment. This necessitates preparation of resources inventory of the area and beneficiaries, so as to understand and frame suitable package of economic activities for maximum utilization of available resources for sustained growth. IRD is lacking in this direction and as a result around 90 per cent of IRD beneficiaries continued to remain below poverty line. Rigidity of the programme is further confirmed by the fact that about 58 per cent of the beneficiaries in the sample and 73 per cent of MF beneficiaries indicated preference for additional activities to increase their family income with the existing skill. Poor achievement of the programme is also due to lack of after credit services, supervision, monitoring and efficient market system. The IRD delivery system has failed to provide there efficiently. Hence, the programme could not bring any significant change in the socio-economic conditions of the weaker section.

Cooperatives of prospective beneficiaries may be able to solve some of the problems. Cooperatives have worked somewhat more efficiently where distribution of assets is equitable and where power of individual member based on caste, class or tribal factor is relatively insignificant. Further, marketing cooperatives have been viable when these are integrated with credit distribution and when an efficient procedure for collecting debts from market proceeds has been devised.

Finally, the effectiveness of 'Rural Development Programme' could be improved, if all the components of the total delivery system have the desire, a will to convert every potential economically viable proposition into actual economic activity and play their meaningful role to promote development. The social infrastructure and other sociological inputs will remain key to rural development and may have to be provided by the state Government.

Conspectus

To conclude, IRD programme could not bring any qualitative change in socio-economic conditions of the weaker section. Major deficiencies in the programme's delivery system viz : lack of suitable planning, proper execution, flexibility in the programme, supervision, monitoring, proper check on overdues and efficient market system, were behind this failure. Interaction of these deficiencies at different levels, hindered the over-effectiveness/viability of the programme. The effect of of these deficiencies was more prominent in marginal farmers and landless households. In the existing social infrastructure and deficiencies of the programme delivery system, viability of assisted units and that of the programme may improve if credit liabilities of MF and landless households are reduced by covering them under 'Differential Interest Rate' Scheme. The social benefits from this will exceed the cost of this scheme to Government Bank. However, the solution of the IRD programme's deficiencies, shall remain the necessary condition for improving the effectiveness/viability of the programme as a whole. □

Support for mountain power lines

WHEN BUILDING power lines in the mountains, it is not necessary to have four-leg supports. In order to hang insulators, it is quite enough to drive a cross piece in a sheer cliff.

The new support has been invented by the All-Union Energy System and Electricity Supply Network Design and Research Institute.

(APN)

Controlling the blue mould in apple

P.N. Kerni, P.S. Shant and Darshan Singh*

VARIOUS VEGETABLE OILS, viz. mustard, groundnut, coconut, neemseed and sesame were taken up in the present investigations to control blue mould rot caused by *Penicillium expansum* in apple fruit. Neemseed oil completely checked the disease incidence when *P. expansum* was inoculated without causing injury to the fruit but 23.3 per cent losses were recorded when fruit was inoculated by inflicting injury. There were 80 per cent losses in uninjured fruit as compared to 40.5 to 60.0 per cent in uninjured fruit with other oil treatments. Taste and flavour of the fruit remained unaffected with oil treatment.

Micro-organisms remarkably contribute to post-harvest losses in apple. The infections may be through injuries, incidental to harvesting, processing, packing, transporting and marketing the produce. Relative humidity and temperature also influence the appearance and severity of fungal diseases during storage.

Penicillium expansum (Blue mould) has been causing considerable post harvest fruits rot in apple during ordinary storage. Several fumigants, treated wraps and dips or sprays have been tried as control measures but little has been reported about the use of vegetable oils on this aspect. Thus present investigations aim at controlling post harvest fungal rot caused by blue mould with the application of vegetable oils so that physical and physiological integrity of fruits is preserved. The experiment was conducted during 1977-79.

Material and Methods

Selected fruit of Red Delicious apple was surface-sterilized with 0.1 per cent mercuric chloride solution followed by washing with several changes of sterilized water to remove traces of microbiological material. *Penicillium expansum* was isolated from diseased apple fruit on PDA medium and identification was done.

For testing pathogenicity, spore suspension prepared from 5 days old culture was used for inoculating apple fruit with and without inflicting injury. Injury was given by pricks with a sterilized pin. Inoculated fruit was incubated at 20 degree C+2 to observe the development of disease.

While laying out experiment, *P. expansum* was inoculated by dipping fruit into spore suspension prepared in sterile water with and without causing injury to the fruit. Fruit was randomly injured by several prickings. Oil treatment was given after two hours of fruit inoculation. Treated fruit was kept at 22 Degree C ± 2 for 20 days.

Vegetable oils, viz. mustard, groundnut, coconut, neemseed and sesame were surface coated with sterilized cotton swaps. Each treatment consisted of 5 fruits replicated thrice in a randomized block designs, Percentage incidence of blue mould rot was recorded on 5th, 10th, 15th and 20th day after treatment.

For organoleptic test, apple fruit (5 Nos.) was surface coated with vegetable oils separately against control (fruit kept as such), and kept for 20 days at room temperature. Skin of the fruit was washed and rubbed with cotton to remove oil coating. Fruit was served to a penal of judges after peeling off fruit skin under secret codes for opinion for taste and flavour. Appearance and colour of fruit was visibly noticed.

Results and Discussion

It is evident that fruit inoculated with *Penicillium expansum* (blue mould) by inflicting injury was hundred per cent spoiled in control 'A'. Minimum loss (23.3 per cent) was recorded with neemseed oil whereas more than 80 per cent fruit rotted due to blue mould rot in other treatments.

Disease incidence in fruit inoculated with *P. expansum* without inflicting injury as also observed hundred per cent in control 'A'. Lentical infection of apple fruit by *P. expansum* has also been reported. Fruit treated with neemseed oil completely checked disease incidence. The disease intensity in other oils on 20th day ranged from 40.5 to 60.0 per cent which has been economically unviable.

Blue mould rot in control 'B' (26.4 per cent) where fruit was neither inoculated nor treated was due to air borne infection at the experimental site.

Organoleptic test did not show any effect on fruit taste and flavour in treated fruit when compared with control (where fruit was kept as such). Oil coated fruit remained shining and free from wrinkles obviously due to evaporation check. Fruit kept as such exhibited withered look and wrinkles. Oil treatment thus was observed to enhance keeping quality and its effect can be easily washed off before fruit is consumed.

Integrated rural development in Orissa

The objective of Integrated Rural Development Programme in Orissa is to evolve a new society with due emphasis on material, intellectual and moral development of villagers, which, for its success, will depend on identification of prospective beneficiaries. This requries professionally trained personnel in each block, timely disbursement of finance and proper selection of villages.

D. N. Lenka

ORISSA is rich in minerals, forests, agricultural and marine resources but inhabited by poor people. It is predominantly an agricultural state and a land of villages with about 90 per cent of its population residing in about 51 thousands of villages in which about 2 crores people live. Experience shows that after 35 years of independence the total number of poor people has been increasing by at least 5 lakhs a year due to population growth. In view of this, it is imperative that the living condition of these people can be brought above the poverty line through proper implementation of meaningful programmes and policies.

Integrated Rural Development will continue to be the main slogan in the nations programme for rural uplift. The prime objective is to lay the foundation of a new society with due emphasis on material, intellectual and moral development of villagers of Orissa. It is only possible by increasing production and productivity in agriculture and allied sector based on better use of land, water and other resources available in all the blocks of the state.

In Orissa

In 1978-79 a programme of Integrated Rural Development was launched by the Government of Orissa. The objectives were: (a) generation of additional employment, and (b) raising of income level of an identified target groups, namely, small and marginal farmers, agricultural labourers and rural artisans. The schemes of development covered under I.R.D. are minor irrigation works, supply of inputs and agricultural implements, land development, soil conservation, distribution of milch and other animals, plough bullocks and bullock carts, horticulture, pisciculture, sericulture and small industries.

During the year 1978—81 the agencies incurred an expenditure of Rs. 7.55 crores towards payment of subsidy to the beneficiaries of different schemes. Loans to the extent of Rs. 23.38 crores was sanctioned and 1,12,758 beneficiaries were covered. Out of 314 blocks in Orissa 114 blocks were covered under normal I.R.D. and 27 blocks were covered under area planning for employment. The balance of 173 blocks are to be covered under I.R.D. as per recent decisions of Government. The total requirement during the sixth plan for implementation of I.R.D. programme, in 314 blocks would be Rs. 81.02 crores. As the programme is financed by the Central Government and State Government on matching basis, the state Government of Orissa is required to provide Rs. 40.51 crores for the Sixth Plan.

The Government of Orissa has laid special emphasis on reducing regional disparities and alleviation of rural poverty during the Sixth Five Year Plan. The success of the I.R.D.P. depends very much on the identification of the prospective beneficiaries. This can be done through the appointment of professionally trained officers in each block, timely disbursement of financial assistance and proper selection of villages.

A novel tele-conference broadcast

ALL INDIA RADIO, MADRAS broadcast a live first-ever tele-conference in the country, with people travelling by land, air and water. The programme organised in connection with the "World Tele-Communication Year" and to highlight the revolution taking place in telecommunication was put on air on 17th May, the "World Communication Day".

During the tele-conference, audience on the move in Madurai-Bangalore flight, in Dredger 'Coloroon' a ship, Quilon Express a train and a Pallavan Transport bus conversed among themselves direct and also with the experts in various fields in the All India Radio studio. The programme established the possibility of direct communication between two moving units.

While a wireless system was installed in the train, bus and the ship, the existing communication facilities on board the aircraft were utilised for the conference. The voice from the aircraft alone was passed through the Airlines Control Room and the Telephones to All India Radio and vice versa. The experts from Southern Railway, Tamil Nadu Police, Madras Telephones, Overseas Communication, Pallavan Transport Corporation, Madras Port Trust, All India Radio and Doordarshan answered the questions of the audience on the move.

After the successful event the Station Director, All India Radio, Madras told that the All India Radio, Madras was taking every efforts to take science and technology to the villages. All India Radio, Madras is helping the formation of Science Clubs in the villages. Seminars are also conducted in these villages periodically and the flow of constant feed back is arranged.

Shrimati D. T. Chari,
Asst. Editor, Yojana (Tamil).

Blood pressure and salt

In this article, Dr. Sharma tells us as to how to prevent blood pressure. On the basis of present data, it appears we have the knowledge to virtually prevent high blood pressure by restricting our salt intake to about one gram per day.

Dr. N. G. K. Sharma

LIFE STARTED on this earth as unicellular organisms in the sea. Salt and water, which the sea water contained, provided nutrition to these organisms. With the passage of time, unicelluar organisms became multicellular and then man came into existence. In the human body all the cells are bathed by a fluid known as extracellular fluid which resembles the sea water with regard to its salt and water content and from which cells derive their nutrition. Nature provides us with enough salt in various food items. However, food habits have changed with time and man has developed a taste for extra salt. That is how table salt has come to be used.

It is well known that tribal communities which do not use salt in their diet do not suffer from high blood pressure. Investigations carried out in different parts of the word indicate that high blood pressure is a disorder of acculturated peoples and is contributed to a large extent by the acquired habit of dietary salt. A century ago, the Africans did not take salt in their diet. With urbanisation, they have also taken to salt with resultant incidence of high blood pressure. In the Pacific Islands, people living along the coast line have an enormous intake of salt because they cook their food in sea water and thus have a higher incidence of the disease as compared to people who live away from the coast-line and have a low salt diet. Generally, both sections of the population are one.

Research Studies

Studies in the University of Iowa have shown that when patients with high blood pressure were given food with extra salt their blood pressure rose significantly. In another study in a London hospital, it was observed that when patients with mild rise in blood pressure supplemented their diet with 6 grams of salt for twelve weeks, their blood pressure rose.

Dietary salt is primarily distributed in the extracellular fluid of the human body, i.e., the fluid present outside the cells. There is a direct relationship between extracellular fluid volume and blood pressure. More the extracelluar fluid volume, higher the blood pressure. Now-a-days, since salt is added to almost all articles of food, the extracellular fluid is always in an expanded state. It has been estimated that when the daily intake of salt is in the range of 1 to 4 grams, one may come across some cases of high blood pressure, when the salt intake is in the range of 4 to 25 grams per day, 15 per cent of the adult population shows signs of high blood pressure and when the daily intake of dietary salt exceeds 25 grams, about 30 per cent of adult population develops high blood pressure. With such a high level of salt ingestion the adjustment mechanism is placed under severe strain and high level of blood pressure is required by the kidneys to handle the increased extracellular fluid lead. It appears that nature did not anticipate man's taste for salt and therefore did not equip him with the capacity to handle a constant extracellular fluid volume.

The relationship between high salt intake and high blood pressure was demonstrated in the laboratory by Dahl and Bianchi. By their experiments on rats, they showed that in the presence of an increased sodium intake, the kidneys require a higher blood pressure to clear the extra salt and water that accumulate in the extracellular compartment. This handicap is seen in only some of the animals which is genetically determined. This may be the reason why all those who consume extra salt do not develop high blood pressure.

Prevention

In advanced cases of high blood pressure, an increased intake of salt causes a prompt deterioration in the condition of the patients. Many studies have now proved that complications of high blood pressure like heart attack, stroke, kidney failure and blindness can be prevented by controlling blood pressure. Unfortunately, many persons may not know that they suffer from high blood pressure as it does not produce symptoms for quite some time. But once suspected it can easily be detected by the simple procedure of recording it. All those with a family history of high blood pressure must get themselves checked specially if they develop symptoms like headache, dizziness, fatigue and body-ache.

The beneficial effect of salt restriction on high blood pressure was described by Allen as early as in 1920. Kampner, in 1948, demonstrated that rice-fruit diet which is low in salt content could effectively reduce blood pressure.

Medical science now regards salt restriction as an important principle in the treatment of high blood pressure. In patients with mild rise in pressure, mere salt restriction alone will bring down the pressure. If this is not successful, addition of a mild diuretic drug like thiazade may be needed to get rid of the excess salt as well water from the extracellualar space. In severe cases, more potent drugs are used.

(Continued on page 31)

Science & Technology Notes

ONE MAN'S food may be poison for the other. The much dreaded, poison weed parthenium which played havoc in several states, has been found to be a good green manure.

At the Sugarcane Experiment Station, Gudiyattam, parthenium, a poisonous weed, has been successfully tried as a substitute green manure. It found to be better than the gliricida (Gliricidia maculata) in its nitrogen content and yield when applied as green manure. The green manure was applied and incorporated three days earlier to planting. The quantity applied was at the rate of 12,500 kg per hectare.

It was observed that survival of seedlings, tillering and yield were better in the plots which received parthenium as green manure.

Energy conservation in pump sets

INSTITUTE OF Cooperative Management, Ahmedabad which is carrying on studies on energy conservation in agricultural pump-sets has in the last two years, rectified 116 electrified pump-sets for field level studies of the techno-economic aspects of different remedial measures. The study, sponsored by Gujarat Electricity Board, Baroda, has revealed that at least 25 per cent of the current consumption of electricity in agricultural pump-sets could be saved if proper remedial measures were implemented. Our farmers used about 8 million pump-sets operated by electric motors or diesel engines and consumed about 200 crore litres of diesel plus 18,000 million Kwh of electricity in such pumpsets. The annual cost of energy consumed was about Rs. 16,000 million (7000 million rupees for diesel with matching lubricating oil plus 9000 million rupees for electricity).

If 25 per cent of such energy is saved, the value of the energy saved may be Rs. 4000 million annually. About 10 to 15 per cent of total energy used in the prime-movers of centrifugal pumps can be saved by use of SUJALA foot-valves developed at the institute.

Bullock lift pump

IRRIGATION needs of the agriculture specially small farmers were met by traditional bullock lift device in the shape of 'Charas', 'Persian Wheel' and later by Chain Pump. U. P. Council of Science and Technology in collaboration with Planning Research and Action Division (PRAD) of State Planning Institute and Appropriate Technology Development Association (ATDA) took up a project for increasing the water life efficiency of bullock devices or developing new device to meet the increased water need of the small farmers.

The team of ATDA and PRAD has developed two kinds of pumps, one based on piston principle and the other based on diaphragm principle. Field test results of both the devices have been very encouraging having lift capacity per hour of 4500 to 5500 gallon from a depth of 6—7 metres, by pair of bullocks. These pumps are being subjected to intensive demonstration test before being declared fit for extension.

In view of the present shortage both of electricity and diesel, these pumps will be of great advantage resulting in increased irrigation facilities on one hand and conserving electric|diesel on the other.

(Research and Industry, CSIR)

U. S. Climate Computer Aids Farm, Urban Planning

THE UNITED STATES has developed a climate computer system that will enable individuals and countries to make optimal use of available climatic information in their day-to-day planning.

Called "clicom," this microcomputer system is designed to translate detailed information on climate —such as measurements of wind, rainfall, air temperature, and sunshine—through standard computer programs into a usable form. Decision makers can then shape their food, water, energy, transport and other daily programmes, and mitigate the unfavourable impact of climatic variations.

Climate data can be helpful in civic planning. In areas that suffer from excessive rainfall, civic planners can better advise on the dangers of extending urban areas along the flood plains of rivers, using historical data on rainfall patterns and flood stages.

The combined hardware and software (equipment and computer programmes) cost of 'Clicom' is about 17,000 dollars.

(USIS Science News)

Heart radio developed

Soviet scientists have developed a heart radio--electrocardiotransmitter – which helps communicate the early symptoms of myocardiac infarction and other cardio-vascular disease from thousands of miles away to a diagnostic centre in Vladivostok.

The wires feelers of the instrument are fastened on to the wrists of the patient and the sensor is joined to the radio communication of the ship. Then the heart signals fly over the ocean to the centre where the specialists decipher them and communicate instant advice to the patient.

The sensor works well wherever there is a radio-telephone or even an ordinary telephone in a flat. This is especially helpful for the sailors on the ships far-away from ports or people working in remote or inaccessible areas like the Arctic.

In the future ambulances will be equipped with such devices so that the doctor may hold emergency consultations even without leaving the apartment of the patient.

(APN)

Success stories

Four-fold increase in sugarcane grower's income

A RECORD SUGARCANE yield of 300 tonnes per hectare, which is nearly five times the average all-India yield of 65 tonnes and comparable to the highest per hectare cane yield in the country, was established at a demonstration plot set-up by the Fertilizer Corporation of India (FCI) at Dengadi Village in Gajam district of Orissa. The cane yield pushed up the farmer's income to Rs. 37,500 per hectare as against his highest income of Rs. 10,600 achieved hitherto.

The record-breaking feat was achieved in the farm belonging to Shri Kora Swain, who used 300 Kg. of nitrogen, 80 Kg. of phosphate and 60 Kg of potash in the form of urea and triple-superphosphate manufactured by the Fertilizer Corporation of India (FCI), and muriate of potash. The technical assistance to the farmer was provided by the FCI based on the actual condition of the soil of the farm determined by testing the soil in Orissa Government's soil testing laboratories.

The total investment in achieving the record yield was Rs. 9,000 while the gross income of the farmer totalled Rs. 46,500 per hectare leaving him a rich profit of Rs. 37,500 per hectare.

This achievement of the farmer has been hailed by experts from the World Bank, who visited this farm and evinced keen interest in the effectiveness of the package of practices recommended by FCI to achieve this record yield. ☐

A Beggar turns skilled band master

THANKS to the Integrated Rural Development Programme, Ratanlal who made errands in search of work at day-break and took to begging for want of work, is now a skilled music band master. He has also earned a name in his field.

The Rural Development Agency which oversees the implementation of the Integrated Rural Development Programme, indeed, has opened a floodgate of self-employment opportunities which was beyond imagination earlier.

Belonging to Nut community, the 32 years old Ratanlal's father had merely four bighas of land giving inadequate yield to feed a large family. That forced him to go in search of work. At times, he got work in a band party.

As luck would have it, a progressive cultivator of Navakheda secured through the District Rural Development Agency, bank loan and government grant to Ratanlal to raise a band party of his own. With increasing demand for his band in marriages and other festivities, the economic condition of Ratanlal looked up. Ratanlal earns about Rs. 12,000 annually by his band. His assistants in the party also get about Rs. 6,000.

Ratanlal's family of fiive including three children lives at Navakheda on Indore-Saver road some 11 Km. from Ujjain. His eldest son Kishorilal, besides his studies, plays lilting tunes on violin in his band. Ratanlal has also arranged for instructions in instrumental music for his two other sons. He is spending a sizeable part of his income on his sons' education.

About 2 lakh village health guides to be trained in 1983-84

DURING 1983-84, a sum of Rs. 40.97 crores has been allocated for the Village Health Scheme. This scheme will cover the entire country by the end of the current year, except the States of Jammu and Kashmir, Kerala, Tamil Nadu and Arunachal Pradesh which are operating alternative schemes.

During the current year, 1,83,379 V.H.Gs will be trained, covering the remaining 899 Primary Health Centres. 3911 P.H.Gs have been covered by the scheme and 2,36,748 V.H.Gs have received training upto the end of the last financial year.

The V.H.Gs Scheme is aimed at strengthening health care and family welfare services in the rural areas. It aims at providing adequate health care facilities to the rural people at their door-steps, as part of the Government's endeavour to provide simple medical aid within the reach of every citizen by organising a cadre of medical, para-medical personnel and health guides chosen by the community.

The Village Health Guide assists in the immunization programme, distribution of nutrition supplements, treatment of malaria and collection of blood slides, propagation of small family norm and provision of supplies of non-clinical methods of family planning.

Under this Scheme, every village or community with a population of 1,000 selects one representative who is willing to serve the community and enjoys its confidences. The responsibility of the Government is limited to providing training and technical guidance to these guides.

The Scheme was introduced in the country on October 2, 1977, and the Scheme is being implemented in phases.

The Sixth and final phase of the Scheme commenced on April 1, 1983.

(*Continued from page 29*)

this is not successful, addition of a mild diuretic drug like thiazade may be needed to get rid of the excess salt as well water from the extracellular space. In severe cases, more potent drugs are used.

Thus population studies in different parts of the world seems to indicate that areas with very high salt intake have a high incidence of blood pressure while those with a low salt intake have very low incidence of this disease. To get rid of the excess salt from the body, the kidneys need a higher level of blood pressure. Treatment of patients with mild rise in blood pressure consists of reduction of salt in the diet and administration of a mild diuretic to get rid of the excess salt from the body. On the basis of present data, it appears we have the knowledge to virtually prevent high blood pressure i.e., by restricting our salt intake to about 1 gram per day.

(Courtesy : AIR, Panaji)

Economic Notes

Inland Waterways Authority to be set up

THE UNION GOVERNMENT has decided to set up an Inland Waterways Authority of India. The proposed Authority will concentrate its activities in certain specific areas for rapid development of Inland Water Transport.

For this purpose it is proposed to undertake a Central legislation on the lines of the draft of "Inland Waterways Authority of India Bill" 1982.

An Advisory Committee comprising among others user interests is contemplated to be set up to advise the IWAI in matters relating to inland water transport and inland waterways.

The National Transport Policy Committee in its report submitted in 1980 had recommended constitutional change in the status of waterways and setting up of an indpendent authority at the national level for development and maintenance of the waterways in the country.

Ecological Task Forces for Himachal Pradesh and J&K

IT HAS BEEN decided to raise two more Ecological Task Forces of the Territorial Army for Himachal Pradesh and Jammu and Kashmir. At present there are two such task forces deployed in the Shivaliks.

These task forces will comprise ex-servicemen mainly drawn from the respective areas. Later, more task forces are expected to be raised for Rajasthan, Jammu and Kashmir and the North Eastern Region.

Rehabilitation of Bonded Labour

THE INTER DEPARTMENT-GROUP has discussed the steps required to rehabilitate 31,150 bonded labourers targeted for 1983-84. It was suggested that the State Governments may be asked to send their schemes for rehabilitation early for release of funds. The Group was informed that central assistance for rehabilitation will be Rs. 4.5 crores on a matching grant basis and the bonded labourers to be rehabilitated in Andhra Pradesh are 3,500, Bihar 2,000, Karnataka 10,000, Kerala 350, Madhya Pradesh 1,500, Orissa 7,500, Tamilnadu 1,300, and Uttar Pradesh 5,000.

The Group also decided that the State Governments should be urged that the rehabilitation of bonded labourers should be even throughout the year so that the funds could be fully and effectively used.

First Design-cum-Development Centre for Sports Goods

THE COUNTRY'S FIRST Design-cum-Development Centre is to be set up at Jullundur for providing a wide range of services for the development of the sports goods industry. The Union Ministry of Commerce has recently sanctioned the scheme proposed by the State Trading Corporation for setting up the Design Centre.

The STC will be funding the establishment of this Centre at an estimated cost of Rs. 80 lakhs, which is expected to be commissioned shortly.

Bagmati Irrigation and Flood Control Project

THE PLANNING COMMISSION has approved the revised estimate of Rs. 185.70 crores for the Bagmati Irrigation and Flood Control Project in Bihar.

The Bagmati Irrigation Project, estimated to cost Rs. 5.78 crores and Bagmati Flood Control Project estimated to cost Rs. 6.54 crores were approved by the Planning Commission in 1970. The original irrigation project envisaged construction of a barrage across the river Bagmati, one mile below the confluence of Lalbakeya with Bagmati, near Dewapur village in Champaran District to provide irrigation to 1,18,829 hectares. It also included flood embankments of a total length of 45 miles. The flood control project envisaged construction of flood embankments downstream of embankments included in the Irrigation Project.

Weavers Service Centre to be set up at Almora

A WEAVERS SERVICE CENTRE will be set up by the Ministry of Commerce for the first time in Almora to give proper impetus to the local woollen industry and handloom sector. This is part of the special interest being shown by the Central Government for the development of hill areas. Almora district has a rich local tradition in wool weaving and the Weavers Centre is expected to offer trading facilities and new designs by master craftsmen to the hill weavers.

Strategy against Drinking and Drug Abuse

A SPECIAL WORKING GROUP has been constituted to formulate strategies against drinking and drug abuse in the country. This Group will be headed by Shri V. P. Marwaha, Joint Secretary in the Ministry of Social Welfare and has 12 other members.

The Working Group will suggest machinery to evaluate and monitor, on a continuing basis, the changing trends in drug and alcohol consumption levels in vulnerable sections of the society, more particularly among the urban and rural under-developed groups, industrial and tribal population.

The Group will also consider ways to develop standarised educational intervention material for supply to various voluntary organisations on alcohol and drug prevention on priority basis, in an effort to monito their effectiveness. The Special Group will also lay down guidelines for the organisations on regional and national basis, training courses for the personnel engaged in developmental programmes.

Targets for house sites for the rural likely to be achieved

ACCORDING TO THE information received by the Ministry of Works and Housing the State Governments have strengthened the implementation and monitoring agencies for house sites-cum-construction assistance scheme for rural landless workers.

The plan allocations for 1983-84 for the schemes are being stepped up considerably and many of the State Governments are likely to achieve the targets envisaged for them in the Sixth Five Year Plan. The plan envisages allotment of house sites to 68 lakh families and construction assistance to 36 lakh families. According to the available information the achievement during the first three years of the plan is about 31.73 lakh house sites and construction assistance to cover about 17.67 lakh families.

The scheme is being implemented as part of the Minimum Needs Programme and the new 20-Point Programme. The Ministry of Works and Housing is monitoring its progress closely.

Universalisation of Elementary Education

THE ADDITIONAL ENROLMENT target of 180 lakhs, at the elementary school stage, is likely to be exceeded by 25 lakh children of 6—14 age group by the end of the Sixth Plan period. The targets of additional enrolment are 117 lakhs at the primary stage and 63 lakh at the middle stage. The enrolment at the end of 1984-85 would rise to 95 per cent and 50 per cent respectively at the primary and middle stages, based on the age group population projections according to 1971 census figures.

In addition to the enrolment position through the formal system, it is estimated that, for the country as a whole, coverage under the non-formal education will be about 60 lakhs at the end of the current Plan. Out of this, the nine educationally backward states—Andhra Pradesh, Assam, Bihar, Jammu and Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal would account for 53 lakh coverage Thus, the total additional coverage at the elementary stage would be of the order of 265 lakhs.

Significant increase in Drug Production

AS A RESULT of concerted efforts made by the Government, the production of drugs has recorded significant increase. The value of the output of bulk drugs is expected to be Rs. 325 crores which would be 13 per cent higher over the previous year's production of Rs. 289 crores. In the case of formulations the value of production will be Rs. 1545 crores in 1982-83 marking an increase of eight per cent over the previous year's production of Rs. 1430 crores.

Alongwith the production, export of drugs and pharmaceuticals has also recorded significant increase. In 1982-83, the export is expected to touch Rs. 115 crores which would be nearly 21 per cent higher over the export for Rs. 95.41 crores in the previous year.

Nungsungkhong micro hydel scheme in Manipur

THE PLANNING COMMISSION has approved the inclusion of 3x500 KW Nungsungkhong Micro Hydel project in Manipur in the State's Sixth Five Year Plan.

The project envisages utilisation of the Nungsungkhong river, a tributory of Thoubal river and includes construction of a trench type weir, 16 metres long across the river Nungsungkhong intercepting a catchment area of 31 sq. miles; a 3.3 km long power channel; 750 metre long penstock; and a power house with an installation of three units of 500 kw each.

The project is estimated to cost Rs. 1.59 crores. A provision of Rs. 30 lakhs has already been included for the scheme in the Annual Plan 1983-84 of power sector of the State.

Massive development of non-formal education

NON-FORMAL PART-TIME education for elementary age group children, who cannot join and attend formal schedule due to socio-economic reasons, is being developed as a massive alternate supporting system to formal schooling in the country.

The thrust and extent of coverage is in the nine-backward states identified by the Centre—Andhra Pradesh, Assam, Bihar, Jammu and Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal. Special central assistance is being given to these States. The cost of the scheme is being equally shared by the Centre and State governments. During 1982-83, a total grant of Rs. 4.62 crores was given to these States under the scheme. The total assistance received by the States since 1980-81 is of the order of Rs. 8.82 crores out of the Sixth Plan outlay of 25 crores.

During the year just ended—1982-83, the total non-formal education in the country has been of the order of 24 lakhs, through 1,00,000 non-formal centres.

Scheme to encourage use of energy and water saving devices

THE GOVERNMENT has given Rs. 150 lakhs as Central assistance to six States in March this year under its scheme to encourage the use of energy and water saving devices. Gujarat has been given Rs. 88.10 lakhs, Madhya Pradesh—26.44 lakhs, Karnataka 24.08 lakhs, Bihar—5.75 lakhs, Kerala—3 lakhs and Orissa—2.63 lakhs.

This scheme was introduced by the Union Ministry of Irrigation in the last financial year. Under this scheme, subsidy is given to the farmers who opt for using the energy and water saving devices like solar pumps, wind mills, hydrams, sprinkler and drip irrigation etc. The subsidy admissible for solar pumps is 75 per cent to the small and marginal farmers and 33-1|3 per cent to others. For other type of devices, the rate of subsidy is 50 per cent to small and marginal farmers and 20 per cent to others.

Mottur Thermal Power Station Extension

The Planning Commission has approved the Mottur Thermal Power Station Extension in Tamil Nadu for inclusion in the State's Sixth Plan. Estimated to cost Rs. 238.28 crores, the 420 MW project is to be taken up for implementation during 1983-84.

Books

Social Profile of Arid Zone Children

Social Profile of Children in Arid Zone of Rajasthan K. K. Singh : National Institute of Public Cooperation & Child Development, 5 Siri Institutional Area Hauz Khas, New Delhi—110016 : pp 261 ; price Paperback Rs. 40 Library Edition Rs. 70.

INTERNATIONAL Year of the Child promoted by the UN instilled in us not only the awareness of value of a child as a future citizen, but also resulted in a plethora of studies covering various dimensions of child care and development. The study under review 'Social Profile of Children in Arid Zone of Rajasthan' is the outcome of the recommendation of the national plan of action drawn during the International Year of the Child in India.

The study covers four districts of Rajasthan-Jaisalmer, Barmer, Jodhpur and Bikaner. Survey was conducted in 300 households from 20 villages in the 5 districts. 60 community leaders in addition, were interviewed for cross-checking information gathered.

Economically the districts are extremely poor-forming integral part of Drought Prone Area Programme-with very low agricultural production. Amenities like drinking water or housing is still a far cry. Belonging mostly to the scheduled caste, the majority is ostracised by society. National Rural Employment Scheme might have offered some economic gains, but no social recognition.

Data analysed showed, no credit to our National Family Planning programme, "44 per cent of nuclear families and joint families had two children while one child was found in 37 per cent of nuclear families and one-third of joint and nuclear families respectively; No multinational children food has invaded the area and breast feeding of the child is common, assuring same resistance power. "Around 14 per cent families had never faced any problem and common illness of children in their families."

Enrolment in primary school has improved, but drop-out rates are higher, as is the glaring disparity in educational opportunities between boys and girls. 'Balwadis are non-existant', but, asserts the study, 'non-formal education and its potential was partially realised'. Sample shows that 159 families had non-school going children. Reason is obvious. Gainful employment of the child or his help is needed at home.

What about malnutrition which inhibits a child's ability to cope with the challenges of daily existence?' Prime Minister's new 20-point programme highlights development programme for children and women. Integrated child development scheme of the Ministry of Social Welfare, to be extended to 1000 projects by the end of current plan, though well conceived, is a drop in the ocean. Integrated Rural Development Programme has approached the Planning Commission for a huge outlay for the next plan period if the proverty line is to be reduced, as committed, from 50 per cent to 40. Where are the resources?

Public Cooperation, nay public involvement, will go a long way to supplement Government and voluntary efforts. Liesure hours, if any, in arid zones are spent in fighting the adverse effects of unkind nature. Where is the time to form Mahila Mandals or Youth Clubs for collective action?

To a sensitive mind, the study will leave an impress. This is verily our country and many of the rural communities struggle hard for existence. He will think twice wasting water in the city when his fellow being in the arid zone has to treck miles for a pitcher of water'. We should be grateful to NIPCCD and to Shri KK Singh for giving a graphic picture of the condition of the citizens to be.

S. N. Bhattacharaya

Economic Planning in India

Planning in India and the Sixth Plan by D. M. Mitthani Vora & Co. Publishers Pvt. Ltd. Bombay. Pages vi-112. Rs. 20|-.

ECONOMIC PLANNING has become a common phenomenon, particularly in underdeveloped economies, where it has been adopted to break the vicious circle of poverty and socio economic backwardness.

Planning influences and directs the entire range of activities of a modern society with all its ramifications. A planned policy for growth and development is, thus, comprehensive as well as complicated.

The book, under review, attempts to provide, in a small compass, a precise and comprehensive analytical review of the thirty years of planning process in the country with a historical background and theoretical base for the benefit of the average reader. An analysis and evaluation of the Sixth Five Year Plan is contained in the book with a view to keeping the reader abreast of the current planning phenomenon obviating his need to go through the voluminous original Plan Document.

It divides into five chapters plus appendices, bibliography and index. Apart from general readers, this monograph can be a source of ready reference to student community of commerce and economics.

—S. K. Dhawan

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The 20-point programme monitoring cell reports . . .

Spreading education

The country has made a steady progress in eradicating illiteracy. But the main hurdle in the progress has been the rapid growth of population. Literacy which was 5.35 per cent in 1901 has gone up to 36.17 in 1981. For males, it is 46.74 per cent and for females 24.88 per cent. More attention has to be given to female education.

Adult education is slow in take off. During 1982-83, this programme was expected to be further developed. Against the Sixth Plan target of additional enrolment of 180 lakh children in classes I to VIII, 29.25 lakh children were enrolled in 1980-81 and 48.43 lakh children in 1981-82. According to the targets for the year 1982-83, 40 lakh children in the age group 6-14 years are to be enrolled in schools and 55.85 lakh adults are to be made literate.

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The 20-point programme monitoring cell reports . . .

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Rapid increase in forest cover

The National Forest Policy enunciated in 1952 advocates the maintenance of 60 per cent of the area in hilly tracks and 20 per cent of the area in the plains or one-third of the entire geographical area of the country under forest cover. At present about 12 per cent of the country's land surface is classed as forest lands. The new forest policy announced recently gives thrust to the generation of employment for rural and tribal population and rapid increase in forest cover including grass cover on denuded lands unfit for permanent agriculture.

Under the Sixth Plan, centrally sponsored schemes on social forestry, including firewood plantation have been undertaken in 100 districts at the cost of Rs. 100 crore. During 1982-83, 211.72 crore trees were planted in different parts of the country as against the target of 196.14 crore trees to be planted.

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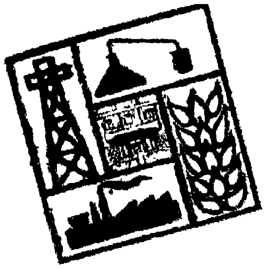

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Nationalised banks, a critique

Lending powerful support to the rationale of bank nationalisation, the author questions the simplistic approach to assess their performance in isolation of the existing overall development strategy. While spelling out the big job these banks do, Mr. Kabra exposes their failings too in very clear terms. He concludes the critique saying that "in the second decade of nationalised banking, a lot of fresh thinking is called for, before the promises held out by them are turned into a reality."

Kamal Nayan Kabra

STATE TAKE-OVER of commercial banks in India followed a good deal of controversy and a lot of campaigning, both for and against. On the basis of their analysis and perception of the working of privately-owned (or, rather, monopolies—controlled) banks, many arguments were advanced by both the protagonists and the antagonists. These arguments continue to play a part in determining the criteria for evaluating the performance of the public sector commercial banks.

At the time of their take-over, the official circles pointed a picture of what may be expected to follow. These official policy-orientations also came to acquire a place in various expectations aroused by the take-over of banks. For example, it was officially stated in the Parliamentary debate, "Indeed, it shall be our endeavour to ensure that the needs of productive sectors of the economy, and in particular those of farmers, small-scale industrialists and self-employed professional groups are met in an increasing measure. It will be one of the positive objectives of nationalised banks to actively foster the growth of new and progressive entrepreneurs and to create fresh opportunities for hitherto neglected and backward areas in different parts of the country. The banks will now be better placed to serve the farmer and to promote agricultural production and rural development generally. Public ownership will also help to curb the use of bank credit for speculative and other unproductive purposes. By severing the link between the major banks and the bigger industrial groups which have so far controlled them, government believe that the step they have taken will also bring about the right atmosphere for the development of adequate professional management in the banking field.

The appraisal criteria

On the basis of the above, it is possible to directly deduce a certain set of credit and banking policy guidelines which provide the touch-stones for having a retrospective view on public sector banking. These will largely be similar to a set of criteria thrown up by a critical social review of private sector banking as it developed and operated in India. In so far as the statistician banks did away with private ownership and control, it may potentially lead to dispensing with the unhealthy practices associated with the earlier dispensation.

Such a process of picking up the criteria for pe formance appraisal of state-owned banks is simplisti and may well be misleading. State ownership doe not automatically realise the potential it creates. I fact, the very capability to produce such results dependent on a number of objective factors oth than ownership. Just as certain schools of thoug ignore the role of ownership pattern in motivati and performances, many others err in assuming th ownership patterns are by themselves capable realising any set of objectives, irrespective of a lar number of other objective factors and constraint An unrealistic set of expectations are a sure invitati to despondency.

The point I am making may well be illustrated referring to the advice given by the Governor of t Reserve Bank of India, Shri C. D. Deshmukh, 1948 over the question of 'nationalisation' of the RE Among other things, he said, "it was not possi to be dogmatic about the nationalisation issue way or the other, on a final analysis, it did not mu matter whether the Bank was run as it was th constituted, or was nationalised . . . it was all a qu tion of timing and fitting the character of the instituti to the pattern of the country's econom He clarified it by maintaining that "when busin and commerce, to a large extent, were to rem within the private sector, it was not at all necess that the main part of the banking system should run as a nationalised institution."

To me, it appears that this view on the irreleva and incompatibility of nationalised central bank a predominantly private enterprise economy, thou misconceived, is based on the recognition and ov stretching of the important role played by the cha cter of the economy and the State and the meth of management and policies which derive from th Just as it was not thought necessary that, given overall character of ownership pattern in the econo the Bank should be in the public hands, similarl was not necessary that all the desired things wo follow once the 'magic' of public ownership is brou into play.

The credit system and the policy framework

Despite the fact that the considerations mentio above are well-known and generally accepted.

becomes essential to refer to them because many unrealistic anticipations are made from State-owned banks and in the face of the emerging reality a feeling of despair is spread concerning the rationale of ending monopolistic control over commercial banks. The main domain of banks is the credit system—or at least the major organised sector component of it. How the credit system can reshape and refashion the economic pattern and to what extent it becomes an important consideration in deciding what can be expected from public sector banking. The methods of management, control, organisational set-up, personnel, particularly the choice of chairmen and directors and the general tenor of economic policies, particularly the pattern and strategy of development are a certain kind of over-riding influences which play a decisive role in determining the limits and possibilities of public sector banking. Many consequences and limitations of the general economic policy and of the chosen strategy of development are often wrongfully placed at the doors of nationalised banks.

The relevant questions to ask of the credit policy, and consequently of the public sector banks, are to be found within the context of the overall, actually operationalised development strategy. In this sense, the question ought to be: was credit policy and the system of public sector banking an effective implementation, control and progressing instrument for the development strategy sought to be implemented under the aegis of overall national level planning? Whatever may be the rhetoric, the prime purpose behind the State takeover of banks was to facilitate certain important changes which were introduced in our strategy of development. Before coming to the details of these new pressures and challenges, some general propositions must be made. Criteria for an appraisal of public sector banks are more appropriately selected in terms of the operational elements of the strategy of development rather than in terms of the stated goals either of planning or of the nationalisation. "Credit follows and|or facilitates development, but cannot determine or bring about development; and this is so despite Schumpeter!" (Kamal Nayan Kabra 'Credit Policy and Development', Commerce Annual 1980).

Limitations of the policy move

Commercial banks can and do create and allocate finance—money capital—which is essential to initiate the process of production in a private enterprise, market economy. They can discriminate in many ways for achieving some specific objectives with respect to structure, pattern and rate of growth of production. They may "create" credit and thereby increase the rate of saving. But how far, in what ways and under what constraints? If the real availabilities of goods and services are not there to correspond with such banks' stimulated rate of investment, many fiscal and financial imbalances will mark the resulting economic processes. If the allocation of bank credit fails to correspond to the distribution of control over other investible resources this situation may hamper growth in certain sectors without compensatory results elsewhere. In an environment of non-spontaneous, induced process of growth, a battery of conventional and non-conventional tools of control, steering, regulation and acceleration are required. These tools—among which the operation of public sector banks find a place—cannot determine the policy intent as well as the outcomes resulting from the structure of the economy. The whole thing is a matter of planned, purposive use of powerful instruments like public sector banks controlling over 90 per cent of bank credit and deposits and a little less share of bank branches.

Why blame banks alone

Thus one has to realise the limitations of a policy move like nationalisation, even though over a longer period one may hope to see some influence emanating from the very nature of the instruments forged and utilised. In fact, the very process of bringing a certain kind of instruments and institutions like public sector banks itself is an element of the general socio-economic framework whose impact is bound to remain unmistakable. But this dynamic cannot be allowed to cloud the impact of many other more critical choices like those concerning the overall strategy of development (defining the content, agents, beneficiaries, time-horizon, sharing of costs and benefits, pace, etc. of development) and the political and cultural choices (like the relative weights in the political process of those who are both relatively and absolutely deprived and those whose political, constitutional rights conflict with the effective improvement of the conditions of the deprived). These considerations are important because the public sector banks are often derided for not accomplishing what its controllers do not even use them for obtaining.

The true perspective

To put the whole issue in perspective, let it be remembered that even while the heat of the move to take-over the banks was on, it was emphasised that "this is not the beginning of a new era of nationalisation ... even after nationalisation, the legitimate credit needs of private industry and trade, big or small will be met." What is meant is that whatever industries are licensed and encouraged to come into existence, whether they be under the control of MRTP companies or FERA companies, they will continue to obtain from the taken-over banks all their credit needs without any general discrimination. In view of this statement of policy, it is naive to fling the facts on the growth of concentration of economic assets and power under the control of large industrial houses as evidence of the non-effectiveness of public sector banks.

If the presently accruing economic surpluses are used, under the presently obtaining property distribution pyramid, for setting up newer and bigger industries, banks cannot but provide credit to them. If about 60 per cent of the outstanding credit goes to account holders in size-groups in excess of Rs. 10 lakhs, this is the logic of the evolving, industrial and commercial structure. If banks were not to follow largely a similar policy, they would be flush with liquidity they would not know what to do with. Not that there is no scope whatsoever for limiting credit to these size-groups, but to expect it to change the relative position substantially is to ignore the logic of the industrial commercial structure we have in our midst.

The "active" role of credit allocation is much less compared to its passive, facilitating role.

Similarly, if industry and trade receive four to five times the credit received by agriculture, one need not blame the banks excessively for not stopping being subservient to more organised, urban and large sized units dominated sectors. The phenomenal increase in and the proportion of capitalist farming, significant increases in the use of purchased inputs and marketed proportion of output in agriculture and the opening of about 75 per cent bank branches in rural and semi-urban areas cannot go very far in changing the scene. This is because the size, turnover, and fixed and working capital of even a small scale, metropolitan small-scale enterprise would be many times the assets, capital outlay and turnover of a big farmer with 10 acres of irrigated land.

In one word, deconcentration of economic resources and powers has remained at the level of a declared policy objective for realising while operational policy initiatives have been weak, faltering and inconsistent. The logic of our variant of the mixed economy and our strategy of treating the resource rich as the king-pins and major agent-catalysts of "development" have relentlessly added to the forces of inequity. But for the steps like take-over of banks controlled by industrial oligarchies, the processes of concentration and centralisation would have been stronger. But the tail cannot wag the dog; credit largely goes, accept over a long period, where the demand for it is, and the demand is determined by the ownership structure and size-pattern of industry and trade. This especially so because the banks are asked to follow commercial principles.

The big jobs these banks do

Coming as bank nationalisation did as a major mechanism for taking credit to the larger farmers who provided the backbone of the green revolution ushered in 1966-67, the success of public sector banking consists in effecting such a great expansion of the banking infrastructure (particularly in rural areas and poorly banked regions) that is massive deposit mobilisation (about 10 times higher) enabled the needs of credit for purchasing modern scientific inputs for Hyv technology based agriculture being met without starving industry of its normally growing requirements. Much more important than the relative proportion of credit going to agriculture is the absolute sum of over Rs. four thousand crores made available to about one crore agriculturist account holders. Add to these small borrowers the number of over one million small industrial units, and one gets an idea of the job that the public sector banks have accomplished in providing some correctives to the logic of the market forces.

Thus in terms of strengthening of banking infrastructure, in terms of playing an important role in implementing the green revolution package of measures in Indian agriculture and in terms of giving access to millions of men of small means, the measure of State ownership and management of commercial banks made a marked contribution to the implementation of the strategy of development which emerged towards the close of sixties. Private banks, with the stranglehold of monopolies, Anglo-Saxon banking principles, strengthened by the pursuit of short-run, commercial profit and hamstrung by the detailed administrative meddling called social control, would have frustrated the 'Green Revolution' and through its backwash effects the entire growth strategy evolved since the days of the annual plans in the mid-sixties.

The policy goals

This is not to say that the public sector banks could not have made a better contribution to social objectives even within the constraints we have recognised so explicitly and, one may add, forcefully. In order to examine this question, let us try to see what the concretely specified policy goals were for which the banks worked. It has been stated by the Chairman and Managing Director of one of the major taken-over banks that the following are the major goals, targets and programmes currently pursued by the public sector banks :—

(1) Stepping up credit to priority sectors to 40 per cent of the total by 1985.

(2) Achieving credit-deposit ratio of 60 per cent by the rural and semi-urban branches on an on-going basis.

(3) Stepping up credits to the weaker sections, within borrowed limits, of Rs. 10,000, to at least 50 per cent of direct agricultural advances by 1983.

(4) Increasing advances to weaker and small scale industries with credit limit of Rs. 25,000 and below, to 12.5 per cent of the total advances to such sectors by 1985.

(5) Lending under Differential Rate of Interest Scheme to be at least one per cent of total credit and making at least two-thirds of such advances to scheduled castes, etc., and making such advances at least 0.4 per cent of total credit.

(6) Carrying banks to unbanked areas.

It is apparent that in terms of the chosen policy, agriculture, small industries, artisans, village crafts, scheduled castes, tribes and backward sections are to be given special treatment by the banks. Regional rural banks were specially designed to facilitate these tasks. Agricultural credit came to amount to nearly 16 per cent of the total. Larger credits than before on softer terms became available to many people of small means. Also the regional spread of banking improved.

But is that all one would expect from banks as an instrument of planning and public policy? Even a cursory look at the nature of the objectives set for the banks suggests that even if these objectives are fully realised, they cannot make a substantial or reckonable difference to the economy. Even the operation of the strategy of development embodied in various five year plans would require a very much enriched set of objectives and programmes for the banks than the one we have seen was actually given to the banks. Therefore, it may be said that adequate attempts to make greater use of the banks as agents of development was not made.

The bureaucratic bungling

Operationalisation of these policies, programmes and priorities leaves many questions of national importance for *ad hoc* decision-making by the managers of the banks. There is very little social control over these decisions, except that the decision-makers are selected by governmental authorities, though in practice the effective field of choice is fairly circumscribed. Since these unspecified aspects are a subject of the banker's decision-making without any clear-cut principles of decision-making (like those following from public ownership, as e.g., discussed in *"public sector banking"* by Kabra, K. N., and R. R. Suresh, New Delhi, 1970), being given and enforced, it becomes an area for the interplay of bureaucratic motivation. Since the performance of the banks is judged in terms of the policy guidelines, overall growth of deposits and advances, branch expansion and banking profits by the controlling Ministry (Department of Banking) and the Reserve Bank of India and the Parliament, a great deal of scope gets generated for bureaucratic discretion, particularly with respect to overall size of credit creation, and its regional, sectoral, industrywise and inter-firm allocation. Here the RBI has to continue with the conventional methods of regulating overall liquidity in the economy in much the same way as it did with respect to private banks. As before, there is a much tighter control over the structure of interest rates by the RBI.

From the point of view of macro-level management of the economy, the non-internationalisation of macro-social rules of decision-making consequent upon the introduction of public ownership through appropriate institutional devices and direct and indirect controls, the macro-economic perspective based on the health and smooth development of the economy as a whole fails to become operational. The problems of indirect steering of the monetary and credit system continue to remain practically as valid with public sector banking as it was with respect to private banks.

The disease, its diagnosis

Just to take one illustration, let us examine the role of public sector banks in an inflationary situation when public policy is powerfully geared to price stability. Since the contribution made by a public sector bank to the process of price stability is no part of its performance assessment and the general "growth" criteria continue to rule, the RBI and the Finance Ministry have to step in in order to make the banks follow a restrictive policy, particularly with respect to advances to trade against inventories. One would have expected that a "public" sector bank would have as much stake in price stability as the central monetary and economic authorities have ! But yet the new bank managers will look to RBI directions and not infrequently may try to bypass these "restrictions" for pursuing so-called "corporate" interests

This failure to internalise a macro-economic, societal perspective may probably be seen at its worst when one sees how the black economy operators [given the symbiotic intertwining of the official and unofficial ("Number Two") economies, one wonders what and who is excluded] make use of the "public" sector banking facilities and channels with as much ease and impunity as they operated in the days prior to state take-over of the banks. One may recall that an argument given with great force for pleading the case of banks' take-over was the presumed difficulties for the black economy after the banks are removed from private control. Referring to the illegal transactions in foreign exchange, most of which are put through by private commercial banks, it was often suggested that most of such avenues can be taken care of by nationalisation of private banks.

But, surely such things cannot follow *ipso facto* from nationalisation.

A lot of fresh thinking needed

The new bankers, seeking growth and growing business, with competition seeping down to the branch level, would in all probability close their eyes about the black or white side of their customers' business. Further more, no-co-ordination has been achieved by the banks with the tax authorities either.

Competitive, self-defeating advertising, excessive recruitment of personnel and the play of many extraneous forces in recruitments are also attributed to dominance of micro-management perspective. No doubt compared to the murky deals of the private bankers such practices as well as open fraud cases pale into insignificance. As N. Dannis, M.P. referring Palai Central Bank, Laxmi Bank, Vivian Bose Commission's findings about the anti-national and anti-social activities of Dalmia Jain Companies, with active involvement of banks under their control, said "if similar enquiries were conducted into the affairs of other industrial houses revelations would be no less startling." But would that be much of a consolation ? Similarly, excessive clustering of bank branches cheek by jaws in metropolitan centres may also arise from the absence of macro-social perspective, unnecessary competition and pressures for metropolitan posting.

If these shortcomings are persisting, making much of the likely pay-off from nationalisation remain unrealised, it is not inconsiderably related to absence of an appropriate cognition of the relevant issues as well. Thus in the second decade of nationalised banking, a lot of fresh thinking is called for before the promises held out by nationalised banking are turned into a reality. ☐

EACH ONE
TEACH ONE

Time now for a bold action to improve banking

The author, with his long banking background, suggests ways and means to improve qualitatively banking and calls on Government to bring to "bear on the task of raising efficiency in banks the same boldness, missionary zeal and determination it displayed when it took the mighty decision to nationalise banking."

S. L. N. Simha

THE OUTSTANDING FEATURE of Indian banking is the phenomenal expansion of banking offices. This process had begun even prior to nationalisation in 1969, under the stimulus of economic development, sponsored by our five-year plans. However, the pace of expansion was accelerated by nationalisation. Even non-nationalised banks came under this influence and achieved a marked expansion of their branches. The number of branches of commercial banks rose from 8,321 in July 1969 to 39,177 at the end of June 1982. In this process, there was remarkable co-operation among the commercial banks, the Reserve Bank of India and the Central and State governments.

Special attention was given to establishment of branches in the rural areas. Happily the Reserve Bank of India and government reversed their earlier stand that rural areas are of a kind of monopoly of co-operative societies. The emphasis on rural banking was not so much to mobilise as to channel funds for the rapid development of the rural economy which had been neglected for long.

With such hectic expansion of banking offices, it is but natural that quality should have suffered. In many cases, the banking premises have been far from satisfactory, for congenial working of the staff. The recruitment of junior staff and promotion from within the bank to higher levels of responsibility and massive training of staff at all levels had to be done in a great hurry. Taking all these into account, it must be said once again that the growth of banking offices is remarkable, by any standard.

The expansion of banking offices has contributed not a little to the development of the banking habit. I do not think that bank management has done anything spectacular in the matter of mobilisation of deposits. Apart from expansion of bank offices, two factors have contributed to substantial deposit mobilisation namely: (i) insurance of bank deposits and (ii) nationalisation of the major segment of banking. In India, people in general have enormous confidence in government banking. Perhaps, if there is a substantial improvement in customer service, the banking habit could develop further. On the whole, considering all the circumstances in this country, including the low per capita income, one need not feel dissatisfied with the growth of the banking habit that has taken place.

Another important aspect of Indian banking is the steady effort to raise the share of bank lenon to priority and neglected sectors, such as agriculture, small-scale industries and exports. Here again, the success in quantitative terms has been spectacular. Bank credit to the priority sectors rose from Rs. 260 crores in June 1969 to Rs. 13,618 crores in June 1981; as a percentage of aggregate bank credit, the rise was from 14.6 to 35.9.

Lack of close supervision

Any type of bank credit needs close supervision and this is specially so in the case of lending to small units in agriculture and manufacturing. Apparently this has not been done, with the result there are heavy over-dues. The objective of official policy is excellent, but there has been undue haste in implementation. Banks have not been able to recruit, in the short-run, staff of the requisite expertise. Supervised credit to small borrowers is costly to administer. Equally important is the attitude of bank staff; they must be development-oriented with the zeal of a missionary and care of a trustee. Apparently, such an attitude is not very much in evidence. The government hoped for much too much from bank nationalisation in the matter of investment of bank staff at all levels. Training and motivation have to be intensified.

The corollary of steady and substantial increase i the share of the priority sectors in bank credit is decline in the share of large and medium industria units, from 60.6 per cent to 37.0 per cent. This credi is much costlier, since the ceiling rates are applied t it. Besides, there are considerable delays, partly at th commercial bank end and partly at the Reserve Ban and, owing to the operation of the Credit Authorisatio Scheme. Besides, public sector units compete with pri vate sector units for the diminishing share of ban credit. Many large and medium units are sick, owing t a combination of factors—bad management, cyclic swings, governmental fiscal and control policies an poor surveillance by banks.

In the result, it is possible that the growth of th dynamic part of the corporate sector has suffered, thoug how much it is hard to say. While not much can done about this, it will be helpful to bestow great responsibility on individual banks, so that they ma disburse credit more expeditiously and flexibly, within the overall policy framed by the Reserve Bank and government.

Gaps in efficient performance

One of the ways of measuring the efficiency of a business enterprise is by its profitability. In the case of banks, this criterion is of even more limited validity than in the case of an ordinary enterprise. One does not know what "adjustments" have been made in the published accounts. In good old days of conservative banking practices, the provision for bad and doubtful debts used to be substantial, so that in general the profitability was understated. One is not sure that this is the practice currently. One may hazard the view that with defaults and industrial sickness galore, there may be a tendency to understate the provision for bad and doubtful debts.

It should also be noted that deposit rates, lending rates, return on investment and emoluments of staff are outside the control of the individual banks. They are determined by the Reserve Bank of India and government. The general view is that banks are, by and large, over-staffed and standards of efficiency and discipline are less than warranted by the pattern of emoluments, a feature noticed elsewhere to in the economy in a big way.

Apart from these, a feature of Indian banking is the comparatively poor progress in standardisation of forms and procedures. Standardisation has an important role to play in cutting down costs, enlarging mobility of staff and convenience of customers. Mechanisation should also be proceeded with, without taking a short-term view of its impact on employment, which in the long run will increase.

Again, as part of the policy of rapid expansion of banking offices, branches have been set up, apparently, without much consideration for the establishment and operating costs, in relation to the volume of business. If this becomes an endemic feature, even after 5-6 years of establishment of a branch, a review must be undertaken whether the branch should not be closed down

Even after considering all these factors, it does seem that the net profit of Indian banks (after provision for taxation, bonus, contingency reserves and ex-gratia payments to staff), of about one per cent of gross earnings, is on the low side. In the case of foreign banks, it is five per cent, but they handle big accounts and operate mainly in the metropolitan areas. All that one can say is that there is scope for higher profits or lower lending rates.

A policy of drift and ad-hocism

Notwithstanding tall claims made by government at the time of nationalisation of 14 big banks in 1969 and now and then thereafter, Indian banks continue to be essentially lenders rather than developmental agencies. Substantial knowledge of the many branches of industry and facets of agriculture, deep involvement in the enterprise to be financed, as guide, mentor and watchdog and enormous patience and perseverance are called for in a big way on the part of bank executives and staff at all levels. The men at the helm of affairs must be persons of extraordinary dynamism and vision. They must enjoy the complete confidence of the government and the Reserve Bank and also be given reasonably long tenures of office to achieve substantial results. Dedication and discipline are also needed in a big way at lower levels. These remarks apply with equal force to people in the regulating and co-ordinating institution, namely the Reserve Bank of India.

For this, we require a totally different type of personnel. We need thousands and thousands of engineers, agricultural scientists, economists, sociologists, chartered and cost accountants, financial analysts, management experts and public relations men. A beginning in this direction has no doubt been made, but the 'beginning' has persisted for too long. Neither the Government nor the Reserve Bank has pursued this matter with vigour, vision and dedication. It has been a policy of drift and ad-hocism. It is sad that the political leadership which had the foresight to bring about nationalisation in a massive way has not done the requisite follow-up work with the same vision and determination.

The result is a banking system which looks a giant and all benevolent but which in reality is weak and inefficient. Neither the depositor nor is the borrower looked after properly. The system is plagued with delays and delays—in the cashing of cheques, transfer of money, making entries, sanctioning loans and disbursing loans. In pre-nationalisation days, an aggrieved customer could complain to the Reserve Bank and government; when most of the banks are 'undertakings' of the government of India, to whom can complaints be made now ? Bank executives feel helpless in the matter of securing efficiency and discipline. All the while, bank executives and staff seem to be worried about and engaged in solving emoluments of personnel at all levels. There is comparatively little time for effecting improvements in banking policies and procedures. Nobody seems to be in real control of the affairs of banks. There is also diarchy, with both government and the Reserve Bank having regulatory authority.

And some suggestions to do better

The situation needs to be remedied by determined action. As already mentioned, we have now a good frame and it needs a lot of filling and finishing. The reforms that are needed are by no means revolutionary or spectacular. They are the ordinary principles of good business management and public administration I shall give below my suggestions :

ONE

The important thing to do for sometime to come is to concentrate on qualitative improvement and slow down in respect of quantity, "better fewer, but better", as Lenin said about seventy years ago, in the early years of the Russian revolution. Let us go very slow in the matter of branch expansion and enlargement of the share of credit to the priority sectors.

TWO

There is no point in opening blindly 3-4 thousand banking offices a year. Even if the net increase is a few hundred it does not matter. The existing branches must be reviewed and some closing down must be done. There is no loss of prestige in this. Equally important is to change the location so that bank staff have more space and amenities. The way offices are now crowded, is no conducive to efficiency and privacy to the customer. Like the Indian Oil Corporation's standardised building programme for petrol pumps, banks must embark on construction of strong, spacious and elegant banking offices.

THREE

I feel there should be a limit to the number of branches which a bank should have, perhaps in the range of 1,200—1,500. Where existing banks have larger branches, they may retain them, but no increase. Some swapping of branches may become necessary.

FOUR

Excepting the State Bank of India, and perhaps 2-3 other banks, banks must confine their offices to a region —South, North, West. This makes for better supervision and guidance. A branch each in the 4-5 places like Bombay, New Delhi, Calcutta, Madras and Hyderabad may be permitted. Some closing down of existing branches, and transfer of business to other banks would have to take place.

FIVE

It is desirable to have boards of Executives Directors for each of the banks. The executive Directors need not (and should not) all be persons with banking experience in the narrow sense. They must be drawn from a wide background in finance, technical expertise in science and technology and management. There should also be an advisory body, meeting once in three or six months. Preferably, these advisory bodies should be on the basis of a region rather than an individual bank.

SIX

Bank staff must be increasingly officer oriented, with a varied background mentioned earlier. The system of Banking Services Boards introduced sometime back is a good one and its scope and authority should be enhanced. There should be a National Services Board for appointing very senior executives such as General Managers, Executive and Managing Directors. These appointments should be taken out of the hands of politicians. Nor should these executives be at the mercy of petty officials in the government or the Reserve Bank.

SEVEN

The Managing and Executive Directors should be given a reasonably long tenure of office—I would say, five years. Retired and about to retire people should not be appointed to these posts. There is a case for a substantial improvement in the emoluments of top executives. Persons who have to run several hundred or a couple of thousand branches with resources of several hundred crores of rupees should not be given starvation wages. They should be enabled to live in comfort and dignity and free from temptations. The present policy of government is wholly unrealistic and short-sighted.

EIGHT

For banking supervision and motivation, there must be a new Commission, with 4-5 whole-time members, of the rank of Governor/Deputy Governors of the Reserve Bank. The RBI has shown it cannot cope with the responsibility of banking regulation. Branch expansion, appointment of senior bank executives, recruitment and training of bank personnel and standardisation of forms and procedures should be the areas of responsibility of the Commission. The Indian Banks Association and the Indian Institute of Bankers have pretty little justification for continuing. They should be closed. Some of their work can be passed on to the National Institute of Bank Management.

NINE

Banks must widen the area of their operations. Investment counselling and entrepreneurial development are areas where they ought to do a lot. Greater depth is called for in banks' operations. In particular, much closer involvement in the operations of bank-assisted industrial and business units is needed, so as to ensure efficiency and integrity on the part of the borrowers. The banker should be a policeman, friend, guide, philosopher and catalytic agent. This is the most important function of a bank, and not just lending. This task is being done in a very superficial way at present. Unless this is done, much of the effort of enlarging substantially credit for the priority sectors will be fruitless.

TEN

I am clear that in regard to small, and even medium enterprises, commercial banks should engage themselves in what is called 'mixed' banking, namely, supply of finance for fixed as well as working capital. The State Financial Corporation cannot do this job as well as commercial banks.

ELEVEN

In the case of large borrowers too, banks have to keep a close eye on management of the units. This will also enable banks to assess more thoroughly and expeditiously than at present. Actually, the banker should probably know, even better and more promptly, the financial health of the assisted unit than many senior executives in the unit.

TWELVE

Reform of the Indian banking system will be incomplete without far-reaching changes in the co-operative credit system, with something like 100,000 societies and banks. Notwithstanding earnest efforts spread over several decades, the co-operative credit system has proved to be weak and inefficient. I doubt if it is a practicable to wind up this system in the near future, though for many years now the process of weeding out has been going on and a via-media between commercial banks and co-operative societies, in the form of Regional Rural Banks, has also been taken up in some way. The Regional Rural Banks too are very much supported by commercial banks besides, the RBI and State governments. Purely from the operational angle, it is good to have a single banking system, incorporating the functions of commercial, co-operative and developmental banks. However, it has to be ruled on wider political and even administrative grounds. These separate entities should be allowed to continue, but they must be reformed. The pace of weeding out of co-ope-

(Continued on page 25)

Rural banking and outflow of rural savings —A case study

Post-nationalisation period of major banks saw an unprecedented branch expansion programme mostly confined to the rural areas. This was because of the credit expansion policy pronounced following the nationalisation. This resulted in the outflow of rural savings to the urban areas. The author looks into the veracity of this hypothesis.

K.M. GEORGE

Bank nationalisation was directed towards the policy objective of credit expansion to the neglected areas and derlicted persons with a view to bringing about viability in the primary sector of the economy. Closely on the heels of this credit expansion policy pronouncement there was an unprecedented branch expansion programme mostly confined to the rural areas. This has resulted in the outflow of rural savings to the urban areas. This paper makes a modest attempt in this direction to look into the veracity of this hypothesis.

Area and Methodology

The field work of the study was conducted at Ooramana village, belonging to the Muvattupuzha taluka of Ernakulam district in Kerala. The village has a population of 5,000 as per the 1971 census belonging to different walks of life. The overwhelming majority follow agriculture as the major occupation. The principal crops grown in this area are paddy, tapioca, coconut, arecanut, rubber, banana, nut meg, millets and pulses. A small percentage of the population is engaged in trade and commerce. The village has a fairly sound infrastructure facility. It consists of mid-land area and is bordered by Muvattupuzha river on two sides—north and south west. There are two Government owned lift irrigation schemes having a total command area of 2,500 acres of land and putting both the schemes together, it has 170 H P. motor and pump sets. In addition to that, a 50 H. P. motor and pump set is owned by a co-operative lift irrigation society and there are more than fifty privately owned lift irrigation pumpsets. The area under study is supplied with power for the last decade and a half. There is a Government High School and a Post & Telegraph office. Drinking water is available in abundance and the villagers draw it mostly from own wells. There is hardly anyone who is beset with this problem. At a distance of some 5 kms. from the centre of the village, there is a branch of the State Bank of Travancore, Canara Bank, Federal Bank Ltd. and a co-operative Bank.

The village is broadly divided into advanced and backward areas. Some 100 households each were selected from both the areas at random based on proportionate allocation to size of land holding.

Discussion

The village has no bank in itself, though there are banks at a distance of 4 to 6 kilometers. People do have banking problems due to its very non existence in the village. Table 1 shows the number and amount of borrowal and deposit accounts in the area under study.

TABLE 1

Area-wise number and amount of deposits and borrowal accounts

Area	Households	Deposits		Borrowals	
		No. of a/cs	Amount Rs.	No. of a/cs	Amount Rs.
1	2	3	4	5	6
Advanced	100	70 (70.00)	41,000 (73.21)	10 (83.33)	15,000 (92.59)
Backward	100	30 (30.00)	15,000 (26.79)	2 (16.67)	1,200 (7.41)
Total	200	100 (100)	56,000 (100)	12 (100)	16,200 (100)

Figures in brackets are the respective percentages of total.

Plough back poor

Some ten borrowal accounts are there with a sum of Rs. 15,000 in the advanced area, while the number of accounts is 70 and amount is Rs. 41,000|- for deposits. For the backward area, some two borrowal accounts are there with a sum of Rs. 1,200|-. There are 30 accounts with a deposit of Rs. 15,000|- The backward area accounts only for 16.67 per cent of the borrowal accounts and 7.41 per cent of the amount advanced. Only 10 per cent of the households are borrowing money in the advanced area as against 2 per cent in the backward area. In the case of deposits, the share of backward area is 43 and 37 per cent for accounts and amount respectively. Some 70 and 30 per cent of the sample rural households account for deposits in the advanced and backward areas at the rate of Rs. 586|- and Rs. 500|- respectively. In fact, of the total deposits only 29 per cent is ploughed back to the village economy in the form of advances. Again area-wise brake-up shows that while 36 per cent is the advance in the advanced area of the total deposits, the share of the backward area is only 8 per cent. Thus, it shows clearly well that irrespective of the degree of development of the rural economy it is a predominantly deposit mobilisation centre and marginally, if not nominal, advance boosting base. Therefore, the emerging inference is that the more backward an area is, the poor the plough back of resources.

Total operational land holding (TOL) size wise analysis may bring about further and interesting insights. Table 2 shows the area-wise break-up of advances and deposits.

Credit deposit ratio negligible

Table 2 shows that there is a concentration of small holdings followed by medium size of land holdings. Some 40, 30 and 30 per cent of deposits of the advanced area are coming from small, medium and large land holding size groups, while the advances to them are 10, 25, and 65 per cent respectively. The same trend is observed in the backward area also. The percentage of advances to deposits show that the small and marginal farmers are hardly getting any meaningful share of their deposits. The case is rather precarious in the backward area. It is also suggestive that the rural deposits in general and that of the lower strata in particular are not used for the area of its mobilisation, as is evidenced by the negligible if not dismal, credit deposit ratio.

TABLE 2

TOL Group and area-wise break-up of deposits and advances

TOL Group	ADVANCED No. of households	ADVANCED Deposits	ADVANCED Advances	BACKWARD No. of households	BACKWARD Deposits	BACKWARD Advance
	2	3	4	5	6	7
Less than 1 acre	60	40	10	75	35	5
1 to 3 acres	25	30	25	20	40	15
Above 3 acres	15	30	65	5	25	80

(Figures show percentages).

Table 3 shows the extent of irrigation facilities available in both the areas vis-a-vis deposits and advances.

TABLE 3

TOL Groupwise extent of irrigation

TOL Group	Advanced Deposits	Advanced Advances	Advanced Irrigation	Backward Deposits	Backward Advances	Backward Irrigation
1	2	3	4	5	6	7
Less than 1 acre	40	10	75	35	5	30
1-3 acres	30	25	80	40	15	50
Above 3 acres	30	65	95	25	80	65

Area under irrigation up only if holding is up

In the advanced area, small and marginal farmers have irrigation facilities for 75 per cent of their land holding while their counterparts in the backward area have only 30 per cent of their land under irrigation. For the medium farmers this percentage is 80 and 59 respectively. As far as the large farmers are concerned, it is 95 and 65 per cent for the advanced and backward areas.

The inference that could be drawn is that as the size of holding increases, the area under irrigation also goes up, of course, the advanced area having an edge over its counterpart. In the advanced area, it is only the small and marginal farmers who do not get adequate credit, in spite of the fact that they have 75 per cent of their land under irrigation. In the case of backward areas, only the large farmers do get a sizeable chunk of credit. Therefore, it is the extent of irrigation facilities which decide to greater extent the plough back of deposits in the form of advances for, it is one of the major factors influencing the demand for rural credit.

However, the inadequate credit flow to the small and marginal farmers in the advanced area, despite having tremendous irrigation facilities is worth analysing. Poor credit absorption capacity is one of the major factors coming in the way of the steady flow of credit to the backward area and the small and marginal farmers in the advanced area.

Concealed security consciousness

The lukewarm approach of the bankers towards the poor farmers and backward areas with concealed security consciousness dictated by risk aversion tendency is one of the major growth impeding factors. This in fact, arrests the tempo of rural development programmes and policies enunciated by the concerned agencies. The bankers find it alternatively easier to make urban advances with their inherited and accumulated experience and expertise. Thus it has become an easy business to mobilise deposits from the rural poor to make advances to the urban community which is by and large engaged in non-agricultural activities. Therefore, it amounts to robbing Peter to pay Paul. This trading of rural prosperity, which is the outcome of multiple sacrifices, to the urban rich, is both untenable and undesirable for it undermines the cannons of equity considerations and balanced regional growth and rural development programmes.

TABLE 4

TOL group area and subsidiary occupation-wise break up—Deposits and Advances

TOL Group	ADVANCED			BACKWARD		
	Households with subs. occupation	Deposits	Advances	Households with subs. occupation	Deposits	Advances
1	2	3	4	5	6	7
Less than 1 acre	12	3,000	1,000	6	2,000	500
1-3 acres	8	38,000	15,000	4	17,000	5,000
Above 3 acres	3	30,000	20,000	2	16,000	8,000

(Figures are in Rupees).

Rural deposits siphoned off

The foregoing table shows that there are some 12 and 6 small and marginal farmers, eight and four medium farmers as well as three and two large farmers in the advanced and backward areas. The credit deposit ratio owing to subsidiary occupation is 33 and 25 per cent for small and marginal farmers, 39 and 29 per cent for medium farmers and 67 and 50 per cent for large farmers for the advanced and backward areas respectively. The credit deposit ratio is invariably lagging behind for the backward area. Again corresponding to the increase in the size of holding, the credit deposit ratio also goes up. For the small and marginal as well as medium farmers, the credit deposit ratio resulting from their subsidiary occupation is both negligible and far from satisfactory. This means, again, the rural deposits are siphoned off instead of being ploughed back into the rural economy. It should have been used with a view to bringing about linkages and spread effects for effecting viability.

It is observed that this type of lop sided development is mostly due to the directive imposed from the top for rural banking, whereas from within, there was neither any zeal, acceptance and preparedness nor had any required expertise to go to the rural areas.

This outflow of rural savings has a plurality of causes, in addition to the above mentioned cardinal ones. The poor extension service rendered is one of the major ailments for not making advances to the ruralites. This inadequate and superfluous extension activity has had its own effects on the rural economy in general and in the rural advances in particular. Therefore, many a time the institutional agencies were half hearted and lukewarm in their approach to rural lending.

Grass root level study required

Poor credit absorption capacity of the peasantry has been enthroned with rhetoric repetition as the major hurdle in perfecting rural lending. It is mostly an end result instead of being a cause. Many a time, the poor credit absorption of the rural areas is a hoax and not substantiated by dispassionate researches. Therefore, what is required is a taluka by taluka specific grass root level study to examine this problem critically in its full perspective.

Inadequate infrastructure facilities, by and large, is an accepted hindrance for making institutional credit available to the rural areas. This statement however, does not hold good for the area under study for it had fairly good infrastructure facilities.

Risk aversion tendency is one of the factors which comes in the way of advances. This is a problem for the institutional leaders as well as the rural borrowers. The former, due to lack of knowhow and experience, are sceptical about such advances, while the latter are indeed, not prepared to indulge in such borrowings because of its possible and potential impact on their popularity and prestige. Besides, the number of documents and papers to be provided to the bank is both cumbersome and time consuming, if not impossible. This event amounts to getting harrassed by various sordid and vested interest groups till they get their "due share" of the deal. Again, risk averision tendency on the ruralites should be studied in its retrospect and prospect, instead of using brand jargons.

(Continued on page 17)

Recession :

No cause for concern about continued growth of economy

How far banks played a causative role in the problems of industry during 1982 ? The two factors mentioned are the trends in bank credit and in imports. The author, who was Chairman and Managing Director, Industrial Development Bank of India, feels that while both these factors may have created problems for particular industries for relatively short periods, one could not be sure as to whether the difficulties were of such a nature as to leave any lasting adverse impact on industrial production.

N. N. Pai

FOR THE PAST one year there have been almost continuous debates at various forums all over the country on the question as to whether the trends in the Indian economy were indicative of a general demand recession, of sectoral adjustments or merely problems peculiar to particular industries arising mostly from special factors of a temporary nature. In my view a continuance of this debate may not be quite productive. Instead, it would be much more useful if one were to take a look at the current state of the economy and its prospects without the use of a term which has in any case become somewhat worn out by usage. Broadly what I propose to do would be to examine the trends in the economy in 1982-83 and the prospects for 1983-84.

In my view the year 1982-83 has been one in which the Indian economy has once again shown its resilience to withstand severe adverse circumstances and continue on the growth path.

As has been widely recognised, the adverse circumstances which the economy faced during 1982 have been mainly of two types. The first of these relates to the deceleration of growth in the world economy in general with its consequential effects on the Indian economy. Second, there was a failure of the monsoons on which our econmy is still so closely dependent. The failure of the rains affected not only production in the agricultural sector which still absorbs two-thirds of our work force and accounts for nearly 40 per cent of the national income, but also power generation and availability of power for industry—since part of the available power had to be diverted for irrigation in the absence of adequate rainfall. Altogether 200 districts spread over a number of states in the different regions of the country have been affected by poor rainfall.

World economy in 1982.

As regards the world economy, 1982 was one of the worst years in recent history, from the point of view of economic growth. For instance, it has been reported that the 1982 GNP figures for the United States recently released by the U.S. Department of Commerce showed that U.S. GNP fell by 1.8 per cent in 1982, marking the worst decline in that country's economy since 1946. The decline or deceleration in growth has been shared by almost all the major economies including the centrally planned ones. Again during 1982, world trade is reported to have registered a second year of deceleration due to not merely a fall in world trade in oil but also on account of lower trade in other items. During 1982 Japan is reported to have faced for the first time in 30 years a fall in its exports, reducing its overall trade surplus.

Although in percentage terms our external trade is relatively small in comparision with our national income, and we account for only a small share of world trade, the adverse developments in the global economy played a major role in the problems of our economy in 1982. For instance, we could not step up our exports of manufactured goods especially engineering goods as would have been possible under more buoyant trading conditions. The sickening of investment and construction activity in some of the neighbouring oil rich countries meant also lesser opportunities for construction contracts for Indian firms and employment for our nationals in these countries. The adverse turn in the international economy affected also the cost and availability of long term investment capital from external sources.

Apart from the above two factors, namely worsening of the world economic situation and failure of rains, both of which are beyond the control of national policy makers or administrators, there has been a third major factor which served to aggravate the problems for the economy in 1982. This has been the poor performance of the power sector. Just as the 1981-82 recovery of the economy especially the

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Excerpts from the Keynote address at the Seminar on "Recession and the Indian economy" organised by Maharastra Economic Development Council, Bombay, 7-2-1983.

sizeable pick up in industrial production—which increased by 8.2 per cent in 1981-82 as against the increase of 4.1 per cent in the previous year—was largely due to the easing of the infrastructure constraints on the coal, transport and power fronts, the problems of 1982-83 have been in a large measure due to the lags in the power sector. Besides the fact that inadequate availability of power affected the levels of production in several industries with consequent linkage effects, the lack of purchase orders from the State Electricity Boards led to problems for aluminium, power cables and related industries catering to the requirements of the power sector.

Trends in bank credits and imports.

Two other factors which have often been mentioned as having played a causative role in the problems of industry during 1982 are the trends in bank credit and in imports during the year. While both these factors may have created problems for particular industries for relatively short periods, one could not be sure as to whether the difficulties were of such a nature as to leave any lasting adverse impact on industrial production. As regards the credit policy, the restrictive policy pursued in 1981-82 having largely served the objective of containing the inflationary trends in the economy, the restrictions on bank credit were progressively relaxed beginning with February 1982 so that in fact lack of availability of bank credit could not be considered as having been a major factor influencing the trends in industrial production especially in the latter half of 1982.

As regards imports, the progressive liberalisation of import restrictions since 1978-79 has been intended to encourage and speed up investment and production in domestic industry and not to hinder indigenous production. The changes in import policy including the liberalisation effected in 1982 have to be viewed in the context of the series of measures taken by the Government over the past several months to quicken the pace of investment decisions, encourage production and to generally improve the competitiveness of the economy. In this context, the liberalised policy for import licensing has provided Indian industry, especially small scale units, easier access to imported inputs This should have helped them to improve their productivity and increase their output The simplified licensing procedures for imports have helped to cut delays and costs and provided a stimulus to units engaged in production for export. Liberalised access to imported capital goods and know-how was intended to lead to upgradation of technology and more specifically cost reduction, energy saving and higher production.

Liberalisation of imports

Viewed from another angle also, steps for liberalisation of imports would seem to have been justified in the current stage of the Indian economy. The country having built up a wide range of industries many of which have enjoyed several years of protection under high import tariffs, a stage has been reached when domestic industry has to be encouraged to compete actively in the world markets. From the medium term point of view, the country has to seek a major expansion in its exports especially of manufactures in order to achieve a viable external payments situation. As it is, payments for oil imports absorb over 65 per cent of the country's export earnings. There has of course been a considerable improvement in this respect over the position in 1980-81, when oil imports absorbed over 83 per cent of the country's export earnings, and the situation is expected to improve further in the coming years with anticipated increases in domestic oil production and an easing of international oil prices. In fact one of the very favourable developments for the Indian economy in 1982-83 has been the satisfactory progress in oil exploration and production. Domestic production of crude oil is expected to increase by over 25 per cent during the year and meet over 60 per cent of the country's crude oil requirements in the year. The target of 21.6 million tonnes of crude production by end of the sixth plan has thus been almost reached in the third year of the Plan. Notwithstanding these favourable developments, there is possibly no escape from the fact that sizeable amounts of foreign exchange will continue to be absorbed by our oil import bill for some more years to come. A natural corollary of this is that we have to step up our exports, especially of manufactures. Such exports in turn could materialise only if domestic industry is able to compete on its own in the world markets. Increased availablity of imported capital goods, know-how and other inputs as well as exposure to world markets could be helpful in this regard.

In these, as in several other matters there could, of course, be differences of opinion as to the timings and phasing of policy measures. For instance, it could be argued that to expose domestic industry to stiff foreign competition without an adequate preparatory phase for improving the efficiency of domestic industry could be counter-productive. On the other hand, it could also be held that the liberalisations have not been of such a nature that domestic industry could not hold its own against foreign competition, given a reasonable degree of efficiency on the part of domestic producers and normal trading conditions In this connection, it is also relevant to note that the Government has taken certain measures in the recent past to plug the loopholes in the liberalised procedures for imports which may have encouraged unhealthy practices including alleged cases of dumping of foreign manufactures to the disadvantage of Indian industry.

In my view, therefore, while industry and the authorities have to continue to be vigilant and deal promptly with any misuse of the liberalised access to imports, there cannot be a retreat from the course set for the economy to achieve a greater degree of external competitiveness than in the past

Competitive viability of economy

I may in this context refer to another aspect of the process of improving the competitive viability of the economy. If one examines the experience of the economy in 1981 and 1982, one would find that some of the main industries which suffered from large build up of finished stocks due to poor off-take during the period were ones which had registered considerable increases in output. For instance there was an increase in output in the commercial vehicles industry by

33.6 per cent in 1981, in agricultural tractors by 21.9 per cent in nitrogenous fertilizers by 34.1 per cent, and in soda ash by 26.2 per cent. No doubt in some of these cases the increases were against the previous year's depressed levels. But nevertheless, it has also to be noted that in a normally functioning market economy, production has to be oriented to the market needs. Several sectors of Indian industry have for many years been accustomed to function in sheltered sellers markets and the tendency for such industries has, in the past, been to seek special protection or props when exposed to a greater play of the market forces. One could observe signs of a welcome change in this traditional approach on the part of some of these industries in the recent months. Looking to the future, I feel that Indian industry in general will have to learn to live in a growingly competitive market environment. Altogether, industry seems to be adjusting well to the new situation, and the average of the general index of industrial production which has registered an increase of 4.9 per cent for the nine months January—September 1982 over the corresponding period of 1981 is expected to show an increase of around 5 per cent during 1982-83 (April-March) over the figures for 1981-82.

Prospects for economy in 1983-84

Let me now turn to the prospects for the economy during 1983-84. As I see it, while the economy would still have to cope with the problems arising from the adverse weather conditions of 1982, as well as with the failures in the power sector, there are several indicators which show that the prospects ahead are good. For one thing, there are signs that sectors of domestic industry such as commercial vehicles, which had suffered from temporary accumulation of unsold stocks of finished goods have been able to step up sales, bring down inventories and maintain satisfactory levels of production. This process of readjustment can be expected to gain momentum and have its beneficial spread effects on industry in general.

Even in regard to agricultural production, although agricultural output has been affected adversely by the drought conditions of 1982, the growth of industrial production in 1983-84 would not suffer for want of any major inputs of agricultural origin. Thus the production and availability of principal raw materials like cotton, jute, sugarcane and oil seeds can be considered adequate. In regard to foodgrains also, the stocks available with Government, supplemented by imports which have been arranged should be sufficient to meet the requirements and maintain a degree of consumer price stability.

Emerging growth impulses

Still more important, perhaps from the longer term point of view, are certain other signs of emerging growth impulses. World economy itself is believed to be poised for a major recovery in 1983. There is expected to be a rebuilding of business inventory levels in the principal economies such as the U.S., after the precipitous falls in inventory levels in 1982. There are also indications of greater efforts on the part of the major industrialised countries to prevent any further set-back to world trade as well as to international capital flows and payments arrangements.

As a participant in international trade and a recipient of long term capital imports, India could stand to gain from the expected favourable trends in world economy in 1983. A number of steps taken by the Government of India in the past few months to facilitate investment and expansion by larger companies in priority industries, to allow foreign collaboration arrangements where needed, and to liberalise the rules relating to investments by non-residents should be helpful in this context to bring about more rapid growth of Indian industry as well as to improve its competitive ability to take advantage of growing export markets. A major change in this regard has been in Government's approach to pricing policy. Several important industries such as cement which were earlier subject to price and distribution controls have benefited from the changed approach and have been able to attract considerable investment and register good progress.

Immense prospects for growth

I may refer in this context to the immense prospects for growth which the Indian economy holds as compared to some of the mature market economics of the world. In a recent analysis of the population and income growth trends during the decade 1970—80 in some of the leading mature economies it has been pointed out that in all these countries the average annual growth rates during the decade were modest. For instance, the annual growth rates for population and national income respectively were : 0.1 per cent and 1.6 per cent in U.K., 1.1 per cent and 2.0 per cent in U.S.A., 1.2 per cent and 3.1 per cent in Japan, 1.1 per cent and 2.7 per cent in West Germany and 0.6 per cent and 3.2 per cent in France. No doubt, the modest growth rates in national income in these countries have to be viewed in the context of their high levels of income. It should not, however, be surprising if business corporations in these countries which are now operating in saturated markets for several items—since consumer demands in these economies are no longer rising appreciably—are attracted increasingly by the growth prospects in developing economies such as ours.

I would venture to suggest that Indian businessmen who are second to none in shrewdness and farsightedness have already grasped the implications of these portents of growth. Thus the various indicators of industrial investment activity in the economy such as letters of intent issued, foreign collaborations approved, consents for capital issues, the amounts of capital raised, number of new companies registered and amounts of assistance sanctioned and disbursed by the term financing institutions have all shown considerable uptrend in 1982 despite the temporary difficulties experienced by certain sectors of industry during the year. For instance, the number of letters of intent issued in 1982 at 1,017 was far higher than in 1981, when a total of 916 letters of, intent were issued. The number of foreign collaborations approved in the 9 months up to end of September 1982 at 435 was higher than the number approved during the whole of 1981, which was 389. For 1982 as a whole, the number of foreign collaboration approvals would expectedly surpass the record of 1980 when 526 collaboration proposals were cleared. The amount of consents for capital issues in 1982 at

Rs. 774 crores was far higher than the comparable figure for 1981 which worked out to Rs. 527 crores which itself was far above the 1980 figure of Rs. 339 crores. The amount of capital raised in 1982 at Rs. 600 crores was also higher than the amount of Rs. 522 crores raised in 1981 when there was a 300 per cent increase over the amount raised in 1980. The number of companies registered as at the end of 1982 totalled 80,000 as against 69,000 at the end of 1981 and 60,000 at the end of 1980. As regards disbursements by term financing institutions, IDBI which accounts for over 60 per cent of the combined disbursements by all the all-India and State level institutions showed an increase of 24 per cent in its disbursements for its accounting year ending June 1982. The increase has been well maintained in the subsequent periods and has been shared by the other institutions.

Difficulties instil cost consciousness

In my view, even the temporary difficulties faced by certain sectors of industry in the recent past have served a useful purpose by instilling a greater degree of cost consciousness on the part of industry. The developments have also encouraged more realistic approaches in regard to the problems of sick units. There is certainly greater awareness now than in the past of the need for selectivity in the nursing of sick units. This has been reflected in the new policy in regard to sick units announced by the Government in 1982. Under the new policy, only units which show clear indications of viability are to be taken up for nursing.

While the prospects for 1983-84 are thus good, I must also sound a note of caution in regard to the future. I referred earlier to the inadequacies of the power sector as one of the major factors hindering progress during 1982. While vigorous steps have to be taken to improve the power situation, in the short run it would also be necessary to carefully plan the future growth of industries so as to avoid the location of power intensive industries in already power deficit areas. Investments in new units should be undertaken only to the extent that clear indications are available that the power requirements of these units as well as of the existing units would be met to an adequate extent. In the absence of such an approach there have often been tendencies for new power intensive units to be set up in power deficit areas, resulting in low capacity utilisation and sickness not only for the new units but also for the already existing ones. Against this background, the financial institutions have of late been discouraging investments in new units which would require large quatities of power of whose viability is dependent on continued availability of cheap power, in areas where there are no clear prospects of availability of adequate power.

Focus on performance of major infrastructures

In considering the prospects for 1983-84 it would also be necessary to focus attention on the performance of the other major infrastructure sectors apart from power, namely coal and railways. The somewhat subdued conditions for agricultural and industrial production in 1982 and the consequent easing of pressures on the coal and rail sectors should not result in any complacency regarding adequacy of performance of these sectors. In the past, inadequate investment and poor performance in the coal and railway sectors had prevented the economy from realising its full potential for output. Continued efforts to improve the performance in all the major infrastructure sectors would thus be an essential requirement for future growth.

To sum up, therefore, I find no cause for concern about the continued growth of our economy in 1983-84. I see indeed a bright outlook for the economy in the coming year. The various steps taken by the Government, the realistic credit policies followed by the Reserve Bank, the activisation of the capital market for new issues and the ready support available from the term financing institutions, which have also considerably streamlined their procedures for appraisal, sanction and disbursal of assistance, shall all help in fostering investment and growth. ☐

(*Continued from page* 13)

Summary Observation and Corrective Actions

Irrespective of the degree of development of the rural economy, it is predominantly deposit mobilisation centre. The more backward an area is, the poorer is the plough back of deposits mobilised from such areas in the form of advances.

The percentage of advances to total deposits shows that the small and marginal farmers in particular have hardly any meaningful share of their deposits. Irrigation facilities if available, influence the extent of plough back of deposits. The credit deposit ratio of small and marginal as well as medium farmers in the context of subsidiary occupations is negligible and far from satisfactory. This means rural deposits are siphoned off instead of being ploughed back. The outflow of rural savings has plurality of causes like poor credit absorption capacity, inadequate extension, risk aversion tendency, lukewarm attitude of the institutional agencies and the erstwhile bad experience with co-operatives.

This imbalance can be corrected only by providing infrastructure facilities at the micro level with linkages. Under the new industrial policy, the focal point of all developmental activities for assistance and encouragement to small scale, village and cottage industries has already been shifted from the state head-quarters to district offices with the establishment of District Industries Centres (DICs). Steps are also taken to see that there is a close co-ordination between the activities of DICs and the integrated rural development programmes to be initiated at the block level. We have to meaningfully co-ordinate the activities in the decentralised sector by matching the employment generation programme with local resources and skills. This has to be done through a wide based institutional coverage of inputs such as raw materials, technical assistance, training, design facilities and marketing support. The arrangements for monitoring and evaluation have to be done with a view to ensuring proper implementation of these programmes. Something like an area approach is to be resorted to. This would bring about linkages and spread effects and ultimately fulfilment of the long desired and cherished goal of balanced regional and sectoral development. ☐

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Commercial banks and mass banking—Myth or reality

Fourteen years ago fourteen major commercial banks were nationalised. This was a far-reaching measure which affected the total banking system in India. This nationalisation was to herald a new chapter on the banking scene. It appears from all accounts that these nationalised banks have shifted their emphasis from class banking to the mass banking. The author has attempted to test this from the stand point of deposits and advances of the rural areas.

N. Vijaya Ratnam

A FAR-REACHING MEASURE affecting the total banking system in India was the nationalisation of the 14 major commercial banks with effect from July 19, 1969. This bold step which was aimed at accomplishing an avowed object of redirecting the bulk of advances to the pockets of priority sectors, particularly agriculture and small-scale industries has heralded an entirely new chapter in Indian banking scene. The declared target of this re-structure is to channel the banking message to the door-steps of the rural clientele and assist them accordingly. As of date, more than 98 per cent of the aggregate deposits and advances of the total commercial banks are only with public sector banks and by the process these banks forward a slogan that they shifted their emphasis from class banking to the mass banking. This present study, with the help of banking statistics attempts to test the validity of the slogan from the stand point of deposits and advances of the rural areas.

Towards mass banking

There is no conflict of opinion on the fact that during the post-nationalisation period, banks started moving towards mass-banking. But on careful examination one realises that this shift in policy is more pronouncing in the branch expansion activity but at a drastically lesser degree in the Credit dispensation programme which really should be the main element of mass-banking. There has been a tremendous growth in the number of rural branches which accounted for 22.4 per cent of the total branches in 1969, which considerably shot up to 56.1 per cent in March 1982. Even a layman can have a better view from this, that out of every 10 branches opened during the period under review as many as 6 branches were allotted to unbanked rural centres. It is this particular finding which causes a layman to build up a blunt idea that commercial banks emphasis was radically shifted from 'banking of classes to banking of masses'. But in the words of a prominent banker "——the major objective of a branch opening, atleast so far as the nationalised banking sector is concerned has to be contribution to development of the region where branches are opened". (D. J. Kanvinde) If this observation is to be subscribed the performance of the present banking in terms of rural credit is rather sour and appear to be remote from the general interpretations.

Branch Expansion

A meagre amount of Rs. 2,629 crores was advanced by the commercial banks in rural areas at the end of March, 1982 which accounts for a little over 10 per cent of the gross credit. At the same time the 22.8 per cent of the total branches located in urban and metropolitan centres have bagged an unduly large share of credit to the tune of Rs. 17,901 crores which accounts for about two-thirds of the gross bank credit. It simply means that the 59 per cent growth in branch expansion acivity at the rural centres during the post-nationalisation period could not count more than 12 per cent growth in the rural credit dispensation activity. On the other hand, the urban and metropolitan centres recorded with 22 per cent and 46 per cent growth rates in credit dispensation during the said period for a small rates of growth in branch expansion programme by 12 per cent and 5.6 per cent respectively. It unquestionably draws a clear inference that mass banking in any country is not at all the sole function of a wider branch expansion.

The rural exploitation by banks can also be witnessed from the deposit side too. Those centres which pocketed large sums of credit could not come up to mark on the deposits counter part. Putting it through numerals, the semi-urban branches went up a little further by 1.3 per cent over their percentage share in 1969, while the urban branches have fallen down nearly by 1 per cent and the metropolitan centres by 10 per cent between June 1969 and March 1982. It is gratifying that the rural branches have put up a sharp rise from 3.1 per cent to 12.4 per cent in this respect. A look into the credit deposit ratio at the end of March 1982 also highlights a special encouragement the banks extended towards the urban and metropolitan centres despite their poor show in deposit mobilisation. 60 per cent of the deposits was distributed in the urban areas themselves and 85 per cent in metropolitan centres. But at the same time the ratio for rural areas was only 57.2 per cent as against the national averge of 67 per cent. This simple analysis speaks of a fact that the rural branches have been functioning merely as 'deposit centres'. And hence, at this apparent state of working of the banks, one can not venture to maintain that Indian Commercial Banks have been nurturing a pure mass-banking.

Credit deployment programme

It shall be much more meaningful, if a special focus is made on the credit deployment programme of rural branches. Of the little 10.6 per cent of the total credit catered to the rural areas the so called priority sectors' share was worked out to be miserable. At the end of December 1981 more than 38 per cent of the total credits was advanced to large and medium scale industries sector, while the much talked of priority sectors was offered only 29 per cent of the gross bank credit. But in principle the Reserve Bank and Government often declare a policy that the "industry should not look to bank funds and should raise its own funds or generate them internally in an increasing manner". (S. G. Shah) Despite this strong stipulation it is only the big industry which is benefited maximum by the commercial banks apart from development banks.

Neglecting smaller borrowers

To review the agricultural loans it is regretable that much of it, apart from not being recovered has not actually gone to agriculture which is still a gamble on the rains "but only to such profitable professions such as the financing of fisheries, horticulture, poultry, farming and other such related activities." (A. K. Ganguli) There is also a strong argument that commercial banks are neglecting relatively smaller borrowers in rural areas and concentrating on well-to-do farmers. (S. R. Reddy) Even at a level of classification of loans 'agriculture and allied activities', the aggregate of loans of outstanding in the lowest category of "Rupees Ten thousand and less' at the end of June 1974, accounted for 36.53 per cent of the total loans outstanding. (C. E. Wadhva) As per the periodic report of the commercial banks to Reserve Bank of India of the total credit purveyed by the former to the agricultural sector 60.8 per cent was received by the big land-lords of above 10 acres each, but small farmers with land holdings of below 2.5 acres each got only 9.4 per cent at the end of 1978. Again this very inadequate portion of credit advanced for agriculture sector was subjected to numerous instances of benami transactions by way of misrepresenting the economic status, as was revealed in many empirical studies. Mr. R. Venkataraman, talking on the bill of NABARD has aptly remarked that "I am not denying that money is flowing to rich farmers." Strictly speaking, the very genesis of Regional Rural Banks in 1975 and introduction of NABARD are due to the failure of commercial banks in shifting their class banking to mass banking in the strict spirit. At the moment, one is more inclined to conclude that commercial banks have just started from classes to meet the masses.

Modalities

It is against this growing dissatisfaction and undue backlog in mass-banking, the Reserve Bank of India has formulated a fresh set of modalities to be followed by the commercial banks to coincide their efforts to the expectations of the Sixth Five Year Plan. In a meeting held on October 30, 1980 the Governor of the R.B.I. drew attention of the Bankers to the recommendations of Dr. K. S. Krishna Swamy working group on the Modalities of Implementations of the Priority sector lending and the 20-Point Economic Programme. He advised the Bankers to endeavour to attain the following targets.

(a) 40 per cent of the priority sector lending should be ear-marked for agriculture sector.

(b) 50 per cent of the direct lending by commercial banks to agriculture and allied activities should be directed to small and marginal farmers and agricultural labourers, and

(c) 12.5 per cent of the total credit given to the small-scale industries should be reserved for rural artisans, village craftsmen and cottage industries.

Time for revision

In view of the growing importance of the agriculture sector and enhanced significance the Sixth Plan thrusted on it, it is time for a revision of percentage allocation by bank, to priority sectors. At least 50 per cent of the gross credit of the commercial banks must be earmarked for priority sectors out of which the agricultural sector should get not less than 50 per cent. Special care must be taken further to see that atleast 50 per cent of the agricultural loans, go to the genuine needy and poor farmers.

The further branch expansion activity of commercial banks must be considered on conservative lines, because of two obvious reasons; (1) Rural branches of commercial banks at present have been running in losses at about Rs. 15,000 per branch. (2) Since the RRBs are conceived to be the low cost structured ubiquitous rural agents of commercial banks may conveniently permit the RRBs, to penetrate even in the rural areas having little infrastructural facilities where the former cannot creep. If this is made a policy for future which the Reserve Bank of India has also stipulated very recently no doubt, the per branch population in the country of 17,000 as per the 1981 census can be witnessed in much advanced time.

Growth of deposits pose problems

An examination into the problems relating to the growth of deposits is also needed. The interest rate structure governing the deposits with banks and corporate sector leave no competitive edge for commercial banks in mobilising deposits. The maximum rate of interest on time deposits with commercial banks is only 10 per cent per annum for deposits with maturity of 3 years or over; while similar deposits with corporate sector fetch upto 15 per cent per annum—a margin of 5 per cent on deposits with the corporate sector is a definite attraction for small investors. (M. V. Subba Rao) Apart from this, there are other factors which have contributed to the poor growth of deposits. Credit restraint measures have slowed down the flow of funds and thereby affected the growth of deposits. The issuance of special Bearer Bonds to tap unaccounted money might have also contracted the flow of funds to the banking system. The omnipresent co-operative

(*Continued on page* 34)

Financing the neglected sector, agriculture

There has been considerable rise in bank advances to the farm sector. The main reason for the increase has been the nationalisation of major commercial banks and the guideline formulated by the Union Government for purposive distribution of bank credit and giving priority to the neglected sector of the economy.

P.L. Guglani and R.K.Pandey

THE RECENT BREAKTHROUGH in agricultural production triggered by the new scientific discoveries and their use on a commercial scale particularly the adoption of new technology has made Indian agriculture dynamic giving new hope and confidence to millions of farmers. The picture underwent a radical change and as a result, credit needs of the farmers increased manifold. So it was felt that cooperatives alone cannot meet the entire credit demand. An urgent need was therefore felt for commercial banks to enter into the field of agricultural finance in order to meet the sizeable gaps of institutional credit for production and investment purposes. The first effort to involve a commercial bank in rural finance, however, began with the conversion of Imperial Bank of India into State Bank of India in 1955, in accordance with the recommendation of All India Rural Credit Survey Committee Report (1954).

It was only after the Government's Policy of social control over commercial banks in 1968 and nationalisation of 14 major commercial banks in July 1969 that further push was given to ensure increasing participation of commercial banks in financing agriculture. To give a more purposeful direction to the resources commanded by the banks, six more banks were nationalised in April, 1980. All these have led to complete revamping of the lending policy of the commercial banks. Thus the commercial banks as a class entered the rural sector in a big way. Prior to nationalisation the pattern of commercial lending did not conform to the national priorities set out in the five year plans. Agriculture, despite its importance in national economy, did not receive due share of the total credit disbursement and the total bank credit to agriculture remained very small.

On the eve of the first natiolalisation, advances to agricultural sector were Rs. 188 crores, which was about 5 per cent of the total bank credit. This, however, rose to Rs. 1,825 crores in 1979, raising the share of agricultural sector in total bank credit to about 10 per cent.

In other words, the percentage share of agricultural sector in the total bank credit doubled during the decade (1969-79). Prior to bank nationalisation, the share of the commercial banks in the total borrowing of the agricultural sector was hardly one per cent in 1951-52 which subsequently rose to 5.3 per cent during 1967-68. This borrowing further rose to 19.7 per cent in 1975 and 34.35 per cent during 1980.

In order to provide a broad operational base for catering to the banking needs of the community in diffrent parts of the country the banks launched a massive branch-expansion programme, unaparalleled anywhere in the world, resulting in a phenomenon expansion of banking coverage of unbanked and underbanked areas. Thus, since the nationalisation of banks, there has been a marked acceleration in the branch expansion programme with the thrust direct towards unbanked centres in rural and semi-urban areas. As a result of this, the number of bank offices increased from 8,262 at the end of June 1969 to 31889 by the end of March, 1980. The relative share of agricultural advances to total bank advances declined from 2.7 per cent in 1950-51 to 0.2 per cent in 1964-65, which means that the commercial banks had neglected the agricultural sector from their business. However, after 1967-68 there was a considerable rise in bank advances to the farm sector which reached 10.5 per cent of the total bank advances in 1971-72 to 12 per cent in 1979-80. The main reason for the increase was the nationalisation of major commercial banks in the country and proper formulation of guideline by the Government of India, for purposive distribution of bank credit and giving priority to the neglected sector of the economy.

Progress of the nationalised banks

The performance of commercial banks in farm financing can be judged with reference to the flow of bank credit to the agricultural sector, the pattern of agricultural advances and their branch expansion programme to increase their rural locational coverage.

Pattern of agricultural advances

Before nationalisation, commercial banks gave loans for agricultural purposes mostly in the form of indirect finance. On this aspect, Singh and George (1968) reported on the basis of information collected from few prominent commercial banks that about 33.5 per cent of the loans were given to State Electricity Boards for rural electrification and about 28.56 per cent of their loans had gone to finance processing and marketing, indicating banks preference for safe and secure investments. However, after nationalisation, commercial banks have made excellent progress in providing direct finance to agriculture. The direct advances increased from 32 per cent in

1967-68 to about 75.2 per cent in 1979-80 while indirect finance decreased from 68 per cent to 24.8 per cent of the total advances to agriculture during the same period. The tremendous rise in direct as well as total agricultural credit during the last few years has been the result of extensive and active participation of commercial banks.

The Rural and Semi-urban branches (22,692) account for 71.2 per cent of the total branches (31889) as at the end of March 1980 as against 62.5 per cent or 5154 as at the end of June 1969. It is interesting to note that of the new branches 54 per cent (12,866) have been opened in centres where commercial banks had previously no offices. Thus banks have provided the most important and vitally needed infrastructure in rural and semi-urban areas to implement the socio-economic development programmes, more importantly, Integrated Rural Development Programme (IRDP) and 20 Point Economic Programme in all the 5004 blocks in the country.

The aggregate deposits rose by Rs. 21,844 crores from Rs. 4665 crores to Rs. 26,509 crores between June 1969 and March 1980. The contribution made to aggregate deposits by the rural branches went up from 3.1 per cent (Rs. 145 crores) in June 1969 to 10.4 per cent (Rs. 2747 crores) in March 1980. Thus, with the expansion of branch net work in rural and semi-urban areas rural savings have been effectively mobilised. They formed 31.13 per cent of the aggregate deposits as at the end of March 1980. This indicates the appreciable growth in the rural and semi-urban branches whose number went up from 37.24 per cent in June 1969 to 56.60 per cent in March 1980. Semi-urban branches also recorded a rise in the credit deposit ratio from 39.74 per cent to 49.33 per cent during the same period. As against this, the credit deposit ratio in the case of metropolitan branches declined considerably from 193.53 per cent to 89.86 per cent. This is obviously an indication of the policy—shift in favour of rural and semi-urban branches where loans for agriculture, allied activities and small business have been considered in a big way.

The National Commission on Agriculture (1976) has estimated the credit requirement for full coverage by 1985, as Rs. 16549 crores. The banks should aim at achieving the target of 40 per cent of their total credit to go to the priority sector by 1985 as per direction of the Reserve Bank of India. Advances to agricultural sector should be at least 16 per cent of the total advances by 1985. Thus the commercial banks have come to play a leading role in financing agriculture. ☐

Babies, Books in Bank's Basket

THIS BANK, one of the biggest in the country at that, is now a book bank for needy students. On Saturday afternoons, when the massive gates of the other banks are closed, long queues of youngsters wait patiently in front of the Canara Bank Head Office, Bangalore.

The students are one-rupee members of the book bank of the Canara Bank. Costly and rare books and text books as well, are loaned to poor students who cannot afford to buy them. For the bank staff who operate this Saturday book bank, it is a labour of love, they neither demand nor get any extra payment. A book can be kept for a fortnight. Till today, not even a single case of non-return of books has been reported.

This is not all. Some bank employees use their off-duty hours to coach poor students for competitive examinations. Some go to the hospitals and offer fruits and medicines to the lonely patients. The Bank has also organised a 'Seva Kshetra' to extend help to the needy, to aid educational and social institutions and to do relief work during natural calamities.

Mathru chhaya

Canara Bank deals in babies also, provided they are orphans. "Mathru Chhaya" is the Bank's orphanage started in 1965. Abandoned babies find a home there. They grow up in healthy surroundings and quite a few who grew up there are well established in life now. Seva Kshetra, the parental body that manages Mathru Chhaya organises holiday camps for rural children, aimed at developing in them leadership qualities and self-reliance. It runs a well equipped, 25 bed hospital which is being expanded. Project Veerapatni Chhaya offers houses and other aid to the families of Servicemen, who unfortunately lost their lives in service of the country.

The Bank helps the handicapped in its own way. Its Stationery Department employs the deaf, the dumb and the mentally retarded. Incidentally, it was found that these people were more efficient than machines; one handicapped person stamped 27000 blank cheques a day with numbers, while the stamping machine could stamp only 24000. In Head Quarters alone the Bank employs some 25 such people.

Slum development

Another venture into which the bank has stepped out is in providing help to develop slums and build colonies for the slum dwellers. The Slum Clearance Board has sanctioned sites and offered monetary assistance to build houses to the slum dwellers in Bagalur and Miller's Tank Layouts. These new colonies are provided with modern amenities. The bank has offered Rs. 1,40,000 to site owners as loan to build houses, which is repayable in small, easy instalments. The Bank helps the colony's multi-purpose Industrial Cooperative Society by buying in bulk some of their products. The society was able to make a profit of Rs. 20,000 in 1982-83.

Banks usually deal in finance. Canara Bank has shown that Banks can deal with humanity too, to mutual benefit. ☐

Rich farmers grab all benefits, leave poor farmers in the lurch

Many rich farmers manage to get loans meant for the poor farmers. This results in the statistics of RRBs exhibiting the small farmer as a beneficiary while the actual gainer is some one else. It should be seen that every rupee earmarked for the development of the section is utilized for the same purpose.

Noorbasha Abdul & Prof. D. Dakshinamurthy

THE SETTING UP of the Regional Rural Banks—RRBs—in India during the year 1975, with an avowed object of financing the credit requirements exclusively of the poorer sections in the countryside, represents a novel experiment of the Indian Banking Laboratory.

The Rural Banks within a short span of seven years demonstrated themselves to be a nucleas of rural development programme, in view of their relatively low-cost structure, local ethoes and professional management. Since the time of their inception the number of RRBs has gone up fast to 73, with 2,678 branches covering 130 districts in 17 states in June 1980. Out of 4,813 branches of RRBs at the end of March 1982, (the figure which is equal to that of the 27-years old SBI, in June 1978), 4051 branches were opened in unbanked areas.

The RRBs within a span of six years have mobilised Rs. 336 crores by the end of December 1981. The quantum of their gross credit has gone up to Rs. 406.59 crores at the end of 1981, thus working out a 67 per cent growth rate over its preceding year and also registering a credit Deposit Ratio of 121 per cent, while the ratio for the commercial banks stood at 66.9 and 57.2 in rural areas even in March 1982.

But the quality of lending, leaves much room for a sense of dissatisfaction and discouragement in the minds of all the concerned—the bankers, the beneficiaries and the commissions. This article seeks to present certain basic shortfalls of the credit administration of RRBs, followed by certain feasible measures prescribed for making the total network of RRBs an effective booster of the rural development programmes.

The following section brings into light a few shortfalls very frequently observed.

Identification of the borrower.—Identification of the eligible party is the starting point in the credit development process of the RRB. The only document that the RRB demands from the farmer is the 10-1 Adangal to be issued by the village Patwari, at the time of sanctioning loans. This simple modus operandi of RRBs, which must be a boon for the illiterate borrowers has, however, helped in the emergence of the intermediaries who divert bank funds to richer farmers. There are many cases where the big landlords who are having land in two villages furnish documents concerning a small piece of land in one village only and avail the benefits meant for a small farmer. The village patwari has to issue false declaration under political pressure and gratification.

In certain areas like Telangana in Andhra Pradesh, the land exchange transactions are executed only on white paper, where the patwari's certificates are considered to be authentic. Because the Patwari's signature can be readily bought and the branch staff are also manageable, there are several cases of misrepresentation of the economic status by the affluent sections.

Through such irrational ways the society itself is allowing the RRBs for a heavy leakage of their funds. While the statistics of RRBs exhibit the small man, as beneficiary, the actual gainer is someone else.

Identification of the beneficiary by DRDA.—District Rural Development Agency (DRDA) is not a novel concept in the field of rural subsidy programme. It is only a new bottle filled in with old wine of SFDA and DPAP and hence has all the inherent loopholes. Hence the identification programme is found false and lengthy innumerous cases and ultimately it is the RRB which has to battle with multitude of defaulters. Moreover for the reason that the DRDA is also blessed with some political colouring with the involvement of the VDO; BDO and the President of the Block, the fruits of the DRDA and the RRBs are not perculated down to the deserving sections.

Gold Loans Business.—A clear restriction of the Regional Rural Banks Act, 1976 that loans must be given only to small and marginal farmers etc., apply to all types of loans. As against this, the RRBs are granting undue proportions of their aggregate advance through the window of "gold loans" for non-targetted section. It shall be contextual here to quote a recent study of the Reserve Bank's team of "the viability of RRBs," which found that as many as 5 out of 8 selected RRBs granted loans (for the rich) which accounted for about 50-60 per cent of their outstanding loans. An official resolution of Sri Viskha Grameena Bank (A.P.) reads "the bank be permitted to grant loans against pledge of gold ornaments to all categories of clientele in view of the profitability for the bank". This has opened the credit counters of the RRBs wider for all classes, making the former as professionalised

Co-operative Societies. Despite this undue business of RRB through gold loans, their records categorise them under small farmers, for purposes of reporting.

Cures of the Crux.—Concerning to the shortfalls in the process of identification, it is only with the committed co-operation of the state that the situation can be repaired. To start with, the Revenue Authorities must update instantaneously all the land records in the state, in such a way that all land holding particulars of a farmer are available in a single record. As the second step, Pattadar Pass Books must be based on the updated records and distributed among all the farmers in the state, through a separate statutory machinery which can be appended to each sub-registrar's office. This proposed office is reponsible for the maintenance of duplicate pass books. Now as the Kamath Committee has rightly suggested "no transfer, mortgage, alienation or gift of the land can be effected without the production of entry in the pass book which can be an effective safeguard against multiple borrowing. If this plan is adopted the question of misrepresenting the economic status does not arise, and if the credit institutions also recognise the pass books a farmer will be saved from lots of inconvenience."

Concerning the identification by the DRDA, it must act only as the subsidising agent but not the identifier, for the simple reason that it is only the lending banker who assumes the risk of supervision and recovery from his customer. This will save DRDA from a time and money consuming process.

Coming to the issue of gold loans one must subscribe to the RRBs' argument that this practice boosts up the safety of funds and enhances their profitability. But in no case the profitability of the RRB should gain priority over its principal objectives.

Maladministration by Staff.—It is rather more effective and authoritative to present here the views expressed by the bankers themselves how there is maladministration of the credit programme of RRBs. The State Bank of India Group which tops the list of sponsored RRBs in India at the end of 1981, expressed its sense of dissatisfaction in a recent meeting of the Chairman and noted the below mentioned unsatisfactory features of RRBs . . .

> "Credit appraisal in many branches has not been satisfactory. Certain advances were granted without proper assessment of needs of the borrowers, cash accruals and repaying capacity".
>
> "In some cases borrowers who were ineligible to borrow on the basis of income criteria had been financed".
>
> "In certain cases there was nothing on the record to indicate that pre-sanction inspections were conducted by the officials before sanctioning of advances. Disbursements were made in stages without verifying the progress of work".
>
> "Documents executed by the borrowers were incomplete".
>
> "Stock statements had not been obtained regularly from the borrowers and where advances were granted against hypothication of vehicles, the vehicles were not inspected."

These few excerpts from the pages of a reputed bank speak one inescapable truth that the Regional Rural Banks are wisely manipulated by all the concerned.

An evaluation of the performance of any credit institutions will be sound and scientific only when all the qualitative aspects in additions to the statistics are X-rayed and appraised. Such type of examination of a problem shall be a reliable source for forwarding acceptable solutions.

Suggestions.—The most effective cure lies with honesty, commitment and morale of the staff and the public. The undermentioned few suggestions, however, are made for the consideration of the various concerned agencies and the policy makers.

Development administrators and bank officials should forge close links with each other at all levels.

It should be seen that every rupee earmarked for the development of the weaker sections is utilised for the same purpose. The judiciary must be empowered to prosecute those who are proved to be guilty.

The RRB Act 1976 remains tacit over many important issues like time of giving loan, purposes of loaning etc. Therefore the Act must be revised so that it states clearly that the loans of RRB are exclusively for the weaker sections, both for productive and consumption purposes.

The Branch Managers and the Field Assistants of RRBs must be thoroughly trained in the philosophy and methodology of IRDP. The Reserve Bank of India should institute some incentives for sincere performance and disincentives for dissatisfactory record.

A sanction of loans must be given only for those projects which are found economically viable and technically feasible; the sanction should be followed by a close supervision. Each branch of an RRB must be adequately manned so as to enable the staff to devote time on supervision of accounts, and the DRDA should continue insisting that the lending by RRB should be on production of loan utilisation certificate for the release of subsidy, to ensure strict supervision on financed project.

CORRECTION

In the Issue dated June 16—30, 1983, on Covers III and IV, captions have got mixed up. The caption given on Cover III, in fact, should have been carried on Cover IV and vice versa. The inconvenience caused to our readers is regretted.

—Editor

Class banking to mass banking in Kerala

E. VASU

WITH THE ADVENT of Integrated Rural Development Programme, Development has ceased to be agriculture oriented. Still, even Government media like All India Radio are actively pre-occupied with publicity on Agriculture. As a result, massive programmes like Integrated Rural Development and National Rural Employment intended to cover a large number of poor in villages get scant attention. In a Development Block an amount of Rs. 35 lakhs is earmarked for subsidy alone (and more than twice of this amount is given by financial institutions as loan) during the 5th Plan period. A minimum number of 600 families below poverty line are to be assisted in finding out an occupation within a reasonable time. For want of proper appraisal, the eligible poor were not aware of the facilities under Integrated Rural Development Programme. Of course, none in villages are expected to prefer an application to avail the opportunities under the guidelines of Integrated Programme to find a place in the list of beneficiaries. However, he survey conducted by the village-level functionaries (Gramasevak were entrusted the task on payment basis in addition to their normal work) was not comprehensive due to various administrative reasons. Many eligible families were excluded from the list of eligible people prepared. On the other hand, banks were reluctant to advance money to poor people without proper guarantee.

Analysing the problems

During the last one year, Kerala Government made an earnest effort to analyse the problems in implementing the National Programmes in local areas to make up the shortfall. As there are 144 Blocks, 86400 families were meant to be assisted. At the beginning of the year 1982-83, there was a backlog of 16976 families. In order to cover the 103376 families in to, to an intensive campaign was organised during February-March 1983. Apart from State level and district level meetings public functions in all villages were organised for distributing assets to the poor. Apart from adoption of Anthyodaya method in popularising the schemes as well as distribution of aid, the consent of people was sought. The major achievement of the celebration of the Integrated Development month in Kerala, besides exceeding the target of 5000 families within two months, was the detection of certain inherent defects of the machinery engaged in implementation of the Programme. Sri C. V. Padmarajan, Minister of Community Development announced an extension of period upto May 16, 1983 for acceptance of applications from eligible families left out.

Popular support, a must

Popular support is essential for a Programme of the magnitude of Integrated Rural Development. An amount of Rs. 1074,28000 was spent by way of subsidy alone during 1982-83. Inclusive of the loan disbursed by banks, Rs. 260941000 have been the total expenditure for the scheme. The financial outlay for the year 1983-1984 is 273600000|- and schemes for implementation are being finalised. A second scheme can also be prepared for families to make the assistance once given effective and income generating. The technical personnel available in District Rural Development Agencies are engaged in arranging market support to schemes tertiary sector for making them viable and fully productive.

The most important gain derived from the intensive drive made by Development Department of Kerala is this change of attitude of the banks who were hitherto engaged in commercial transactions alone. By persuading bank officials in participation in Credit Camps as a prelude to identification of beneficiaries and sanction of loan, they are induced to take a positive attitude towards the poor people. This has made 'Class Banking' in Kerala 'Mass Banking'. Each household below poverty line is assisted through an appropriate package of technologies, services, and asset transfer programmes through an effective monitoring done from time to time.

(*Continued from page* 10)

rative societies should be increased. Simultaneously, the involvement of commercial banks in rural and developmental banking must expand steadily. This is absolutely necessary if we have to achieve high rates of economic growth, with social justice and equal opportunities for all persons and regions.

The broad goals of government, in their nationalisation, strategy, are well conceived. The performance in regard to their implementation is, on the whole, disappointing. Mere sentiment will not achieve much. Government has to be a hard task-master, using *at all levels*, the carrot and stick principle and not mere exhortation. Organisationally too, banks have to be geared for better performance.

The suggestions made above are neither revolutionary nor novel. They have been made by others and by this writer repeatedly. What is now required is that government should bring to bear on the task of raising efficiency in banks the same boldness, missionary zeal and determination it displayed when it took the mighty decision to nationalise the major segment of Indian banking about fourteen years ago. □

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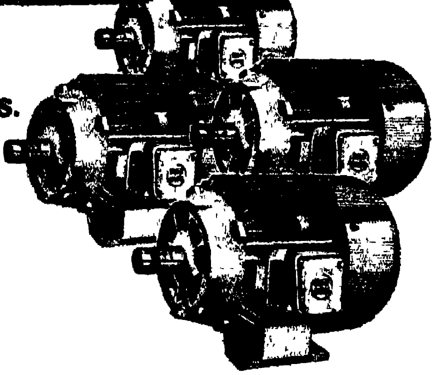

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Indian Bank's new stress on rural lending programme

(from our Madras correspondent)

THE INDIAN BANK has launched upon a new programme to effectively implement and monitor the rural lending programme. To achieve this, the Bank will be setting up as many as 153 Gramodaya Kendras all over the country in the next two years. Of these 25 Kendras were opened on 21st March, 1983. Nine Kendras were opened in Tamil Nadu.

Explaining the main feature of the Kendras, the Chairman and Managing Director of Indian Bank, Mr. G. K. Nair said the Kendras which would be established in identified branches will cover a cluster of existing branches or a large number of villages around the existing branches. The personnel who will be provided to these Gramodaya Kendras will bring to bear on their activities not only understanding and sympathy to the problems of the rural borrowers but also help in initiating the much needed technological changes in the rural investment. Rural lending is essentially a mass lending activity calling for efficient and committed cadre and a suitable organisational framework. An integrated approach to lending for various purposes under these factors will prove convenient for the bank and beneficial to the borrower.

The service of these Gramodaya Kendras will extend to all types of borrowers such as village artisans, handloom weavers, small and marginal farmers, landless labourers and the purposes for which loans are to be given cover a wide range of both farm and non-farm activities. A special feature which is sought to be introduced in these Gramodaya Kendras are counselling services and marketing assistance. Intending borrowers who are not in a position to know the technical and financial implications of investments will be advised to seek the guidance of Gramodaya Kendras so that they may be properly advised in all aspects of the investment proposals and the necessary follow-up action that will be required for making the investment a success. Assistance for marketing the products will also be given to the borrowers. The officers in charge of these Kendras will be assisted by necessary staff who can monitor the investments and also take up recovery of loan at the very doorstep of the borrowers.

Another area where Gramodaya Kendras will help will be to increase employment opportunities in rural areas and also bring about technological improvements and innovations. Each Gramodaya Kendra will prepare an action Plan every year which will indicate the various schemes to be implemented and also the extent of financial assistance available for the operation of the Kendra. Loans would be sanctioned without any delay.

In short, Gramodaya Kendras will be the agencies through which Indian Bank will focus its efforts in spreading its services to rural clientele in general and weaker sections in particular. ☐

Developmental miracle in Gunjur Palya

GUNJUR PALYA was a god-forsaken, windswept wilderness, not so long ago. In 1982, the Canara Bank adopted the village, marking the commencement of a developmental miracle.

Initially, the Bank helped five nomadic Kuruba families to settle down there. Gradually 111 settler families from various weaker sections of society found their homes in Gunjur Palya.

With the help of the Agricultural College, Hebbal, the Bank organised a farmers' meeting in the village. As advised by experts, the settlers were persuaded to take to dryland farming.

Dryland farming

The Bank made available to the settlers 15,000 subabul seedlings. Bore wells were dug to solve the drinking water problem. Loans were made available to buy milch animals, sheep units, bullocks and carts. Kurubas, being cowherds and shepherds traditionally, took good care of their animals. Veterinary personnel from Bangalore, just 24 kms. away, helped them to keep their animals in good health.

Narayanappa, a blind Kuruba orphan, was one such beneficiary. He got a cow, through a bank loan coupled with a subsidy. Now he sells 10 litres of milk every day. With a crop loan from the bank, he is also cultivating various crops on the agricultural land allotted to him.

The settlers use techniques of dryland farming to grow hybrid ragi, tur and soyabean. Seeds, fertilisers and necessary financial assistance were distributed in the village on a door to door basis. Shepherds soon took to farming with such incentives, made available without even asking.

Ramaiah had a different occupation, traditionally. He belonged to a family of sericulturists. With the Bank's help, he has been able to make his business more paying.

Shramdan

The settlers have learnt the value of cooperative efforts. They built drains and an access road to the village. Every house in the settlement has been whitewashed through Shramdan. HUDCO loans are now available for more houses. Balwadis cater to the needs of the children. The bank arranged TRYSEM training for the girls and it is also providing loans to the trained girls to set up tailoring units etc. on their own. Even cooking lessons are arranged so that the nutritional value of the food cooked is not lost.

Above all, the settlers of Gunjur Palya do not require any external help now to solve their problems. Weekly meetings held every Saturday afternoon help to thrash out their difficulties and to arrive at solutions.

The initiative taken by the bank has helped the pastoral Kurubas to supplement their income by farming and to settle down on land. Most important, self reliance has instilled in them self confidence to face the present and the future too. ☐

New 20 Point Programme in Karnataka

The Cobler's Dream

MADAKATTI, an obscure village lying 55 kms. east of Bidar in Karnataka has a population of about 2,400. People of all communities, including backward Marathas and Kurubas live here. A middle school located in the centre is the only outstanding building in the village which is dotted by huts, mostly dilapidated.

The narrow mud road leading to this village has not seen many vehicles. For long, poverty stalked this hamlet as the people lived off mostly as coollies as they did not have anything better to do.

Kallappa who is now 70, comes from a scheduled caste. His living memory, running back to the last half-a-century, recalls only painful images of penury. A cobler by birth, Kallappa's earning could not give him means even for a modest living. So he abandoned cobler's work and took to the work of a coollie. Yet his daily earning was two rupees only. Kallappa says that it has been so for the last 15 years. His cobler's instruments were hopelessly worn out. He could not buy new instruments for want to money. It has all along been one-meal-a-day for him all these years.

A knock at the door

One fine morning a year ago, Kallappa was surprised to see a white-collared babu coming to his doorsteps. The stranger asked so many questions about Kallappa's livelihood. He told Kallappa that he was from the State Bank of India. Then as he was leaving, he gave Kallappa a grand dream.

Many events swiftly took place thereafter. Kallappa visited the Bhalki Branch of the State Bank of India where he was offered a loan of Rs. 400 to re-start his traditional cobler's profession. Kallappa rushed to Bhalki to buy leather and other equipments To his surprise, his daily earning started going up. Very soon Kallappa repaid the bank loan.

Now Kallappa's dream started taking new roots. He wanted to expand his trade by increasing his output. This needed more money. The bank once again gave him capital loan assistance of Rs. 1,000. Kallappa was now poised to manufacture more chappals a day, repair more shoes a day and earn more money. As if by magic, Kallappa had crossed the poverty line. ☐

Sanchayika Comes To Sikkim

EARLIER a number of hawkers used to come outside the gates of Kendriya Vidyalaya, Gangtok to sell their unhygenic and dirty stuff to the school children during lunch hour. They don't come now. It is not because of the action of any authority but because the students do not buy their stuff any more. Instead, they save their pocket money with "Sanchayika".

"Sanchayika"—a unique savings scheme for students—has recently been introduced for the first time in Sikkim in the Kendriya Vidyalaya, Gangtok. Run by the National Savings Organisation, the scheme is aimed at inculcating and encouraging the habit of savings among the children. They save out of the petty amounts given to them by their parents to spend.

By the children, for the children

"Sanchayika" is a savings Bank of school children run by the children. The Bank Manager, the counter clerks and the accountant of the bank are children themselves, though in the initial stages the teachers do help them in learning these functions. In addition to encouraging the students to start the practice of regular savings, it also teaches them the normal practice of banking and acquaints them with instruments of money like cheques.

Each student is a proud owner of a pass book. Every time a student deposits his savings, an entry is made in the pass book. The students can see their money grow. In case of need, the students may also withdraw small amounts from their accounts.

When the students leave their school, they will go not only with a tidy sum in hand but also with the good habit of thrift formed over the years which will stand them in good stead throughout their future lives. ☐

Fortune is on his side

Harshvadan Shah

MR. VALLABH DEVJI, marginal agriculturist of Dungara village in Kamrej taluka of Surat district in Gujarat State was hardly earning Rs. 2200 per annum from jowar crop. His income-limit was raised to Rs. 4475 thanks to implementation of New 20-Point Programme. He received Rs. 5000 as loan from the Bank. Government of Gujarat also extended financial assistance to the tune of Rs. 2000.

Shri Vallabh Devji took to cash-crop of sugarcane instead jowar. He incurred incidental expenses of Rs. 750 and had to spent Rs. 350 towards oil-engine and incurred labour charges of Rs. 225. The family members put in 260 man-days. The Sugarcane crop was of 400 quintal and without domestic consumption, the entire bulk was sold in open market, fetching him an income of Rs. 6800.

Deducting an amount of Rs. 1325 of expenses from the gross income of Rs. 6800 the net amount earned by Shri Vallabh Devji was Rs. 4475. He re-paid an amount of Rs. 1100 towards loan. ☐

You and your health

Physical fitness : What it means

"You and Your Health" is our new fortnightly feature aimed at giving our readers authentic information on different aspects of physical health. Here we begin the new feature with useful tips on physical fitness.

Dr. S. K. Manchanda

MAHATMA GANDHI felt that a person is healthy if he is free from all diseases and can carry on his normal activities without fatigue. According to him such a man should be able with ease to walk 10 to 12 miles a day and perform ordinary physical labour without getting tired. This may as well be taken as a definition of a fit active man ready to respond to the environmental challenges. Such a person is fighting fit but not necessarily an athlete for top class competitive sports or a prize fighter.

There are people who may not walk 10 to 12 miles everyday. Their life may consist mostly of using the bus, motorbike or car to reach the office, spend 6-8 hours on desk work or conference table interrupted by an hour or so for lunch and then come back home for another meal and sleep. Depending upon the age group and the general type of physical activity they may undertake, they will be having various grades of physical fitness. They are also the people who are more likely to get diseases.

Human machine

Physiologically speaking each individual has a lot of potential to get the maximum from the human machine by way of physical work. Thus as the severity of work increases a normal adult has the capacity to increase his heart rate from about 70|min to about 200|min, his cardiac output from a mere 5 litre|min to almost 35 litre|min, pulmonary ventilation from 6-7 litre|min to almost 70-80 litre|min, oxygen consumption from 1|4 litre|min to almost 2.5 or more litres|min, and so on. The human machine has also brisk reflexes. If an individual has the capacity to mobilize the activity of his heart and lungs to achieve a particular task, within a short period of the accomplishment of the task, the body achieves back the normal levels of heart rate, cardiac output and respiration. Thus one is fit again to meet another challenge.

The capacity to meet the challenge is compromised depending on the extent of unfitness. When one is not indulging in any conscious activity i.e. sleeping or lying down, minimum energy is being spent, minimum oxygen is being consumed and the heart rate and cardiac output are also at minimal levels. On the other hand when one is taking a brisk walk say at 7-8 km|hour, or cycling or climbing stairs, running or some form of hard manual labour, more energy is required, more oxygen is required, both circulation of blood and activity of lungs have to be augmented.

More vigorous the activity of the musculo-skeletal system, more will be the mobilization of the activity of heart and lungs. The fittest person may achieve the maximum mobilization. The least fit may not be able to accomplish even the minimal cardiopulmonary requirements for going to the toilet.

By being physically fit

There is a lot that you can achieve by being physically fit e.g. you will be able to—

(i) work physically harder and faster for longer periods so that everyday chores become easier.

(ii) meet the ordinary demands of everyday life and still have energy left over for unexpected demands and sudden stresses.

(iii) take part in games and sports without getting exhausted.

(iv) keep your joints mobile and your body supple so that you can bend and stretch without causing strain.

(v) keep your body in good working order and so ward off aches and pains.

(vi) feel healtheir and more alive.

(vii) protect your body from heart attack and some other disorders.

(viii) enjoy life more.

A person who is really fit is supple, strong and has stamina.

Flexibility is the ability to bend, stretch, twist and turn when you want to.

Strength is extra muscle power used for those unexpected heavy jobs like pushing a car or even a cupboard.

Stamina is the staying power, endurance, the ability to work harder for longer.

How fit are you ?

The best way to test fitness is by exercises involving continuous rhythmic movements of large muscle groups such as those of the arms, legs and trunk. But if you are very unfit, it is pointless to test fitness by this method. As a rough guide try to answer the following questions :—

(1) I can feel my heart thumping after a few flights of stairs.

(2) I am left gasping for breath even if I run only a short distance.

(3) It is a terrible effort to bend and tie my shoelaces.

(4) I am tired out after doing only an hour or two of house work.

(5) I am tired out after carrying two bags of shopping for about 400 meters.

(6) I avoid physical effort if I possibly can.

If the answer is yes to any one of these questions and you are not pregnant and generally in good health, you would benefit by being more active and take an exercise schedule.

If the answer is no to most of these, then possibly you are fairly fit, you can undertake more exact and precise tests to find out the level of your fitness. These tests will be detailed during the lecture. One such test is very simple it is given here below :

Jog gently and easily for about 1.5 kilometers. A person between 35—45 years who jogs regularly should be able to accomplish it within 10 minutes flat without undue breathlessness or other discomfort. During the test and immediately afterwards he should be able to carry on an ordinary conversation. However, the time taken to cover the distance depends on age and sex e.g.

Age	Men	Women
Under 45	10 min	12 min
46-50	11 min	13 min
51-55	12 min	14 min
56-60	13 min	15 min

The Road to fitness

(a) *Exercise programme for fitness* : There are a large number of programmes which are popular in various countries. Various programmes for raising the levels of suppleness, strength and stamina respectively are available. Some of these will be described. It may be cautinoned however that one must not overdo it. If you have ever suffered from a heart attack or high blood pressure, you have chest trouble like bronchitis or asthma, have spells of fainting or dizziness, some trouble with bone and joints e.g. arthritis or you are recovering from a recent operation or illness, consult your Doctor and have medical check-up done before starting on the exercise programme.

(b) Smoking and fitness do not go together for smoking is very harmful for the lungs, heart and blood vessels. The efficiency of these organs is decreased and affects first of all the stamina of the individual and later affecting other aspects like strength and suppleness. Smoking is the single most recognized cause for atherosclerosis heart attack and lung cancer. Stop it altogether. This is no halfway.

(c) Fatness and fitness do not go together either. Some aspects of shedding weight by exercise programme and diet control will be detailed.

(d) *Alcohol and fitness* : Keep Watch. The watchword is moderation. The concept of moderation may differ from person to person. It is better to stop it altogether.

(e) *Yoga, relaxation exercises and fitness* : The efficacy of *yogasanas* and some *yogic* exercises like *Surya Pranam* is well known, possibly on account of the simultaneous mental poise that is produced. Life is full of various types of stresses. The system of physical and mental exercises provided by *Yoga* perhaps is the best but it does not replace the aerobic exercises.

Monitoring the programme

A simple test has been given. This can be used. More precise tests are available. The physiological monitoring of the programme aims at exercising muscles so vigorously as to attain a level of heart rate that is advisable for a particular person depending on his age and sex, and maintaining that heart rate for a period of at least 20 minutes. Some of these tests will be described.

Physical fitness and prevention of disease

Being physically fit is very important from the point of view of prevention of disease, especially diseases of heart, blood vessels and lungs. It is interesting to observe that at least the diseases of heart and blood vessels are no longer the first killers in U.S.A. This has been achieved essentially by two pronged approach : (1) make available the emergency care fast enough and (2) awareness about the requirements for physical fitness and various types of fitness programme, through public education in health sciences. Sooner the various medical colleges implement physical fitness programmes in their extension services, the better and more economic it will be.

Physical fitness and performance in sports

It is generally recognised that our players in games like hockey, football, tennis and many athletic events etc. do not lack skill, desterity or ability to maneuvre, but their grading in physical fitness leaves much to be desired. Possibly this is due to lack of appropriate programming and monitoring for physical fitness. Knowledge is available. Application of knowledge will help.

**(Courtesy : All India Institute of
Medical Sciences, New Delhi)**

Acid rain: The unseen threat

Acid rain, which has emerged as the great scourge of the industrialized countries, is an increasing threat to India, where acidification of the atmosphere has far outstripped that of the USA, for instance, because the country has still to learn a lesson from the mistakes of industrial development elsewhere, points out a professor in the School of Environmental Sciences of Jawaharlal Nehru University, New Delhi.

C.K. Varshney

RAIN is the most important source of fresh water, available to all free of cost. This source of joy, providing a new lease of life by greening the landscape, may not remain so any more. In the last few decades, the rain water has become progressively more acidic. "Acid rain" is used to describe all precipitation—rain, snow, sleet, dew—which is more acidic than normal.

An acid gives a characteristic sour taste to water. Strong acids are powerful corrosive chemicals, capable of causing skin burns and making holes in cotton clothing. Even in small amounts, acids are very toxic to living organisms : which is why acids, such as vinegar, can keep food from spoiling.

Acidity is measured on a pH scale, ranging from 0 to 14. A pH of 7 is considered neutral. From pH 7 up to 14 are alkaline or basic solutions, such as milk of magnesia and household ammonia. The higher the pH, the more alkaline the liquid. From pH 7 down to 0, it indicates acidity. Thus, the lower the pH, the more acidic the liquid. Vinegar and lime juice have a pH of about 3, and distilled water a pH of 7. The pH scale is logarithmic. This means that each unit on the scale is a factor of 10 higher or lower than the next unit. For example, an acid of pH 4 is 10 times stronger than one of pH 5, and 100 times stronger than one of pH 6.

Generally, "clean" rain is slightly acidic as it dissolves varying amounts of carbon dioxide, which is a common constituent of our atmosphere. The acidity of rain is governed by the balance of ions in solution. The lowest pH value of rain is 5.6 when it is "clean". This is the pH level produced by carbonic acid if distilled water were in equilibrium with atmospheric carbon dioxide. Acid precipitation or acid rain is defined as one which has a pH less than 5.6 in many parts of Scandinavia, Western Europe, Canada and the USA, the rain has become increasingly acidic. The few measurements made before the 'forties did not show any acidification of precipitation. Now rain averaging a pH of 4.6 is common in eastern North America. This is ten times more acidic than "clean" rain at pH 5.6 Rain with pH 4.0, which is not uncommon, is 40 times more acidic than "clean" rain. In some storms, pH as low as 3.7 or even 2.1 has been reported. Estimation of the pH of precipitation that fell before the Industrial Revolution and still preserved in glaciers and ice sheets, has been found to be above 5.

Acidification of our environment is man-made Significant changes have occurred on a regional and, perhaps, global scale. Large quantities of sulphur and nitrogen oxides are emitted into the atmosphere through, for instance, burning of fossil fuels and smelting of sulphide ores, particularly of lead, zinc and copper. At high temperatures, such as on burning of fuels, oxides of nitrogen are formed by the combination of atmospheric nitrogen and oxygen. The major contributors of oxides of nitrogen are power houses, automobiles, domestic fires and smelters. The oxides of sulphur and nitrogen are readily converted into strong sulphuric and nitric acids in the atmosphere and are brought down in rain and snow. Acid rain, therefore, is a cocktail of sulphuric and nitric acids, their ratio depending on the quantities of the oxides of sulphur and nitrogen discharged into the atmosphere. Currently, 60 to 70 per cent of the acidity is ascribed to sulphuric acid and 30 to 40 per cent to nitric acid.

Pollution sources

Emission of sulphur dioxide occurs both from man-made and natural sources. Globally, sulphur dioxide emission from natural sources is estimated to vary between 78 and 284 million tons per year. The acid rain problem has been created, however, by the emission of oxides of sulphur from man-made sources, which have dramatically increased since the Industrial Revolution. Sulphur dioxide emission from man-made sources now is as much as that from natural sources. Burning of fossil fuels for power generation contributes 60 to 70 per cent of total sulphur dioxide emitted globally. Annual global emission of oxides of nitrogen from anthropogenic sources is of the same order as from natural sources : an estimated 20 to 90 million tons. Twenty or 30 years ago, most sources of air pollution were close to the ground and only transported short distances. The result was heavy air pollution in urban and industrial pockets, while rural areas generally were not affected. A cheap and quick solution to the local air pollution problems employed was to raise the heights of chimneys and stacks to diffuse the pollutants. The "spread it farther and wider" method improved the air quality locally, but transformed this ecological problem into a regional or, perhaps, a global one. Now pollution is carried tremendous distances in the atmosphere. Moreover, during the longer journey, significant chemical and physical changes occur to produce more hazardous products. Acid rain is a result of the combination of long-distance atmospheric transport and transformation.

The ecological impacts of acid precipitation are far-reaching, insidious, and likely to produce irreversible changes. Available information and experience convincingly demonstrate that it affects every thread of the ecological fabric adversely in a subtle manner. The acidification of lakes and streams affects aquatic plants and animals. Acidity raises beyond safe limits the levels of heavy metals, such as aluminium, manganese, zinc, cadmium, lead and copper, in water. Over 10,000 lakes in Sweden alone have been acidified to a pH below 6 and 5,000 lakes to a pH of less than 5.0. Similarly, thousands of lakes in Canada, the USA and Norway have become so acidic that they are rendered unproductive. Acidity results in the killing of fish, reproductive failure, reduced growth and skeletal deformities. Large-scale salmon and trout kills are caused by excessive lowering of pH. Change in pH prevents hatching of fish eggs and kills the young fry.

Many bacteria and green algae which are necessary to aquatic systems are killed due to acidic conditions. Decomposition of organic matter by bacteria is slowed down at low pH, causing an accumulation of organic matter and, thus, poor nutrient regeneration in aquatic ecosystems. Prolonged acidic conditions result in the total collapse of aquatic systems, making them sterile.

Adverse effects

Acid rain affects the land and vegetation in a variety of ways. Important plant nutrients, such as calcium, magnesium and potassium, are progressively leached out of the soil and, at the same time, potentially toxic elements, such as aluminium and zinc, accumulate. Useful micro-organisms in the soil are replaced by harmful disease-causing fungi. The population of beneficial earthworms is weakened, as they cannot tolerate an acidic environment. Experience of stationary high-pollution sources in Swansea has shown serious debilitating effects on meadows, cattle and soil.

The relation between acid rain and vegetation is very complex. Tree growth and forest productivity may be adversely affected by acid rain. In general, acid rain causes leaf damage, accelerates leaf surface erosion and affects seeds germination and seedling establishment. Information on the effect of acid rain on forest productivity is not as conclusive as in the case of aquatic systems. There is no doubt, however, that many mosses and lichens, which are important food sources for certain herbivores and grow on tree trunks and forest floors, will be destroyed.

Acidification is man-made and it is necessary, as well as technologically possible, to halt it. In certain instances, the acidified lakes and rivers can be restored. A solution to the problem can be short-term or long-term.

Use of lime

Rehabilitation of acidified water bodies can be achieved by neutralizing the acid with lime. In Sweden, over $ 4 m. are spent every year on liming the acidified lakes. So far over 700 lakes and an entire river system, covering 647 sq. km. have been limited since 1978. Liming is a short-term measure and it needs to be repeated periodically. It is expensive; and it would be an enormous task, if repeatedly undertaken. Moreover, it is also not clear whether large-scale liming operations will not create ecological problems of their own.

An effective and permanent way to control acidification of the environment is to reduce the emission of oxides of sulphur and nitrogen. This can be achieved by changing the energy-use patterns—through conservation or the use of non-polluting sources. Various techniques are also available for scrubbing flue gases before they are released into the atmosphere. Methods are also available to reduce sulphur emissions from non-ferrous smelters. Oxides of nitrogen can also be reduced through reducing or better control of combustion temperature. Reduction in the emission of acidic gases is necessary and should be part of all new projects. Investment in containing pollutants at the source is most effective and, often, the least expensive.

The Indian scene

The acidity of rain water in India has not been adequately monitored. Occasional pH measurements of rain water have been made at the six Background Air Pollution Monitoring Network Stations (established between 1974 and 1976). In the absence of time-series data, and also due to certain other technical constraints, this information is of limited value. However, at one of the stations, Mohanbari, rain of pH 5.5 was recovered in 1976.

The acid rain problem is very much in the making in the country. In some urban and industrial areas, rain of pH below or close to the critical value has been received on occasions windward of industrial establishments. Observations of rain of pH 4.5 and 4.8 were made in 1974 in Trombay and Chembur respectively in Bombay. Acid rain has been reported also from Delhi, Nagpur and Pune.

The current pace of development is bound to promote acidification of the environment. Fossil fuel consumption in India is steadily increasing. (Coal production increased from 35 million tonnes in 1950 to 150 million tonnes in 1980 and is expected to be 240 million tonnes by 2000). It has been estimated that the total emission of sulphur dioxide in the country from the burning of fossil fuels increased from 1.38 million tonnes in 1966 to 3.20 million tonnes in 1979. This represents a 21 per cent increase, as compared to the increase of 8.4 per cent in the USA during the same period, although, in absolute terms, sulphur dioxide emission in India is much less than that in the USA. A vast expansion of thermal power generation has been planned. The new breed of super thermal power plants, a large number of which are planned, will substantially add to the acidic gases in the atmosphere.

Harm from such activity can be avoided through foresight and imaginative planning. We should learn from the experience of industrialized countries and prevent progressive acidification of the environment. There is urgent need for systematic and broad-based monitoring to provide timely warning of the acidification of the environment.

DEPTT news India

Books

Macro-economics for Bank Managers

Macro-economics for Managers by W. Duncan Reekie; Published by Heritage Publishers, 4C, Ansari Road, New Delhi-110002; First published : 1983; Pages 163, Price Rs. 70.00.

TODAY'S MANAGERS need to have a basic understanding of economic concepts as also the cybernetics which operate in the functioning of an economy through various combinations of economic parameters. Since the external economic environment has its impact on the operational efficiency of an enterprise, it is imperative that they should keep themselves abreast of what is happening around the world. This would be possible only when they have an adequate grasp of the technicalities involved.

It is precisely from this angle that this book has been written. Surely, a reading of the book will give sufficient knowledge and life insights of management people who have no spare time to indulge in greater details. Topics like Keynesian analysis, fiscal policy, national income, monetary theory, banking, international trade, etc., have been dealt with elaborately for easy comprehension with the help of illustrations and charts. One strong point of the book is that it conveniently avoids a stereo-type way of explanation as it has ample glimpses of dealing with the brass-tacks.

The concept of multiplier has been described without much of mathematical sophistication and rightly so. The monetary phenomenon of yesteryears has been demolished by the author when he says that money supply growth results in ever-rising inflation rates while contraction is apparently futile. He, therefore, makes a plea that the objective must be to restore the markets' confidence in tight monetary control and low inflation rates. At the same time, this is not conceivable so long as each country is free to follow whatever monetary policy best suits its short-term political goals. The author suggests that the major nations should make a joint commitment to stabilise their currencies against each other's whereby each agrees to allow changes in its Central Bank's foreign assets to be fully reflected in their respective money supplies. Then, exporting inflation and unemployment by successive devaluations would no longer be possible as the country whose price level rose faster than those of others would have to intervene in the foreign exchange market.

Navin Chandra Joshi

Controlling Resources

The Control of Resources by Partha Dasgupta, Oxford University Press, New Delhi, 1982 Price : Rs. 85, Pages 223.

PROF. PARTHA DASGUPTA of the London School of Economics has made a timely and worthy contribution to the environmental debate that has been raging in advanced countries for quite some time and which has also started surfacing in developing nations in recent years.

It cannot be disputed that development planning literature has "shied away" from the analysis of environmental problems. The current social benefit-cost analysis centres mostly around industrial and agricultural projects. By environmental problems the author adverts to those class of resources which are renewable but potentially exhaustible even if left untapped by men. Examples include fisheries, aquifers, forests etc. According to the author, environmental discussions need to be conducted in the face of a clear recognition that these resources are often common property, with resolutions of environmental problems involving changes in the allocation of property rights; resource use may well be irreversible and resource stocks often affect welfare directly.

The author brings certain interesting points. Unlike other resources, environmental resources affect community welfare both as stocks and flows. Unlike computers and tractors, these resources usually affect welfare as stocks, not merely as flows. Fisheries and aquifers are useful not only for the harvest they provide. As a stock they are directly useful, since harvesting and extraction costs are low if stocks are large. Forests are beneficial not only for the timber they may supply. As a stock they prevent soil erosion and help maintain a genetic pool.

By bringing to bear the tools of economic analysis on environmental issues, which are in the realm of professionals like scientists, lawyers, Mr. Dasgputa has cleared some of the misconceptions. The re-examination of the advocacy of 'Maximum Sustainable Yield rate' (MSY) in the fisheries and forestries is illustrative. The author unequivocally demonstrates that "except by fluke the optimal policy is not the maximum sustainable yield". The author advances two convincing reasons why this is so : (i) that the social rate of return from the resource and social rate of discount could be different; (ii) future harvest costs could be reduced by aiming at a stock larger than the one implied by MSY.

Although the author avers that the book is designed to be read by technical as well as general readers, lay readers can not avoid getting stuck by the calculus and widespread mathematical models. However, the book under review deserves to be read for the new and fresh dimension it has brought to bear on the subject of environmental issues that are unfortunately left untouched in developing countries like ours

G. Srinivasan

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Review Article

Africa through an Indian's eyes

Melville de Mellow

THIS BOOK has many redeeming features. It is not just a travelogue. It is a serious collection of impressions about a continent gargantuan and largely unknown to most of our countrymen. To Indians, Africa is usually saddled with the word "Darkest". Mr. Raju brings it alive and portrays it as it is—an Africa, young in years of freedom but striving to reach for the good things in life, and aiming to strike a balance between the pressures of modern technological sophistication and the myths of religion and witch doctors. The book has some excellent investigative reporting—but it is much more than an investigative report. Though Mr. Raju has tapped many sources for information and has effectively squeezed the orange dry while researching his book, it has about it nonetheless, the stamp of authority and an abundance of knowledge and information garnered from personal contact and experience, as also uncanny observations of people, places and things. When the author weaves into his narrative personalities like Jim Corbett, and the Adamson's or writes of the early Indian coolies, who constructed the Nairobi-Mombasa railway line, while the lions of Tsavo stalked them, he dexterously spins a golden thread of a shared affinity 'twixt Africa and India. His chapters on African wild-life, are spellbinding and through it all, shines the author's love of people, animals and things of beauty.

Nothing escapes the eyes of Mr. Raju, whether it is the Chinese Room of Michaela Denis or her psychic prowess, or Pop Binks, who did not quite make '91", but who had been Kenya-based from 1900, and who had the honour of selling a [illegible] to Col. Teddy Roosevelt This to my mind, is the reason for the book's appeal. Nothing is too insignificant for the author when he tackles a personality or describes an incident. Once you pick up his book, it is difficult to lay it down, and this is perhaps, why I forgave the person who burgled the first copy I was given for review, from the glove-boot of my car! Obviously, the petty car-burglar, could not resist the temptation of reading the book in its entirety! Nothing else in the car was missing! The author is painstaking in his assessments, as also getting at the kernel of any story he sets out to investigate. There are many personalities in Raju's book that give proof to the old saw, that "A man with memories. lives twice". Ruth Eden is one such. Throughout this book the author observes the ethic of objectivity. He sensitively underlines both the possibilities and the paradoxes prevalent in Africa. He gets at the nerves and marrow of that nation, and while doing so, he touches many poignant echoes of the past like the Mau Mau—the plight and predicament of Asians living on the fast disappearing fringes of the old order. And towering above this huge and complex world explored by Raju, is Mount Kenya—a thing of beauty without parallel. And here lies the wisdom and fair-mindedness and credibility of the author, who can graphically etch his revulsion to misery or squalour—cruelty—prejudice or superstition, but seldom fails to lift his eyes and fasten his gaze on the beauty of Africa, which he describes with a remarkable intensity of feeling. There are many humourous passages in this book and some of the funniest concern Col. Patterson's Indian Station Masters, and army of coolies.

The author uses his heaviest artillery against poachers and film stars, who are the greatest menace to the survival of African wild life. He has unearthed astounding evidence to prove this and shows that this menace is real and growing and must be put down ruthlessly if African wild life is to survive. The strengths of this book lie in the author's instinctive habit of honesty, that has made him instil his wrists to write only that which he has researched carefully, and knows to be true. Nothing that he writes is lazily assumed, or hastily perceived, or piously accepted. Raju's book ends on an incident "out of this world"—as a young Kenyan Post-graduate student, devours the fire-flies that came through the window, after a shower of rain. Indeed, the fire-fly may have a message for all authors, for I believe that a good author, has to be something of a fire-fly, and carry some sort of inner fire. R. K. Raju has that fire, and I hope we will get many more excellent books from his pen

Why Africa? by R. K. Raju: published by Vantage Press Inc. 516, West 34th Street, New York, New York-10001: Price $ 7.95: Pages 1[illegible]

(*Continued from page* 20)

Commercial Banks and mass banking

societies in the countryside are offering somewhat higher rate of interest on all types of deposits since these societies are very close to hand for rural elite. A great proportion of rural savings is pocketed by the societies. The fast spreading ubiquitous rural credit institutions and regional rural banks have also stood at present times to be potential competitors for the commercial banks. One may wonder to note that these six years old RRBs have mobilised deposits to a surprising tune of over 355 crores at the end of March, 1982.

An appropriate solution for this deposit sickness is not too difficult to assess. One such cure for the amilioration of deposits decline is enhancement of the interest rate on deposits by atleast 1 per cent which is reasonable amidst the existing potential competition. Secondly, the commercial banks in general and the public sector banks in particular should be more rational and committed towards the carrying out of their social responsibilities towards the financing of really deserving weaker sections so as to make them economically viable and potential for potential savings. ☐

SOME FACTS ABOUT BANKS IN INDIA

Structure

—Commercial Banking System in India comprises 205 banking institutions—201 scheduled commercial banks and 4 non-scheduled commercial banks (June 1982).

—Scheduled commercial banks include such banks which carry on business of banking in India and which

(a) have paid-up capital and reserves of an aggregate, real or exchangeable value of not less than Rs. 5 lakhs, and

(b) satisfy the Reserve Bank of India that their affairs are not being conducted in a manner detrimental to the interest of their depositors.

These banks are eligible for inclusion in the second Schedule to the Reserve Bank of India Act, 1934 and when so included are known as Scheduled Banks.

Banking System in this context covers the following—

	No. (June 1982)
1 State Bank of India	1
2 Associate of SBI	7
3. Nationalised Banks	20
4 Regional Rural Banks	121
5. Other Indian Banks in the private sector	34
6. Foreign Banks operating in India	18
TOTAL	201

* Nationalised banks are wholly owned by the Central Government.

* State Bank of India is mainly owned by Reserve Bank of India with minority share holding by public.

* Three of the associate banks viz State Bank of Hyderabad, State Bank of Patiala and State Bank of Saurashtra are wholly owned by State Bank of India.

* In case of four of the associate banks viz. State Bank of Bikaner and Jaipur, State Bank of Indore, State Bank of Mysore and State Bank of Travancore a majority of their share holdings belongs to the State Bank of India, with minority share holdings by the public.

* The public sector banks (28) do not require a licence to carry on banking business in India.

* Regional Rural Banks (RRBs) are essentially Scheduled Commercial Banks and represent a combined venture of Central Government, and the concerned State duly sponsored by a commercial bank. The authorised capital of each RRB is placed at Rs. 1 crore and the issue capital at Rs. 25 lakhs, the subscription to which is in the proportion of 50 : 35 : 15 between the Central Government, sponsor bank and the concerned State Government.

Number of offices, Deposits and Advances

* The period since the nationalisation of 14 major banks in 1969 witnessed a marked expansion in the activities of commercial banks. The number of bank offices increased from 8262 in June 1969 to 39180 as at end June 1982 and average population per bank office registered a fall from 65 thousand to 17 thousand during this period.

* Of the 39180 bank offices in India, the network of 20 nationalised banks covered 20838 offices. Bank-group-wise distribution of offices is given below:

As at end June 1982

Bank Group	No. of Bank offices
1. State Bank of India	6047
2. Associate Banks of SBI	2813
3. 14 Nationalised Banks	17804
4. 6 Banks Nationalised in April 1980	3034
5. Regional Rural Banks	5118
6. Other Scheduled Commercial Banks	4202
7. Foreign Banks	132
8. All Scheduled Commercial Banks	39150
9. Non-Scheduled Commercial Banks	30
10. All Commercial Banks	39180

* At present there is no district in the country without a bank office.

* There are 104 unbanked block headquarters in the country.

* Deposits mobilised by scheduled commercial banks in India totalled Rs. 45831 crores in June 1982 compared to Rs. 4646 crores in June 1969.

* Proportion of time deposits to total deposits increased from 55 per cent in 1969 to 80 per cent in 1982.

* Deposits mobilised per office of scheduled commercial banks works out to be Rs. 117.07 lakhs in June 1982 as against Rs. 56.23 lakhs in June 1969.

* Advances of Scheduled Commercial Banks aggregated Rs. 30104 crores in June 1982 against Rs. 3599 crores in June 1969. Consequently, per office credit stood at Rs. 76.89 lakhs in June 1982 as against Rs. 43.56 lakhs in June 1969.

* Investments in Government and other approved securities totalled Rs. 16883 crores in June 1982.

* Credit-Deposit ratios stood at 65.7 per cent in June 1982.

* Priority sector advances of all scheduled commercial banks increased from Rs. 504 crore, (14 per cent) of total credit, to Rs. 8327 crores in Dec. 1980 (34.7 per cent).

* Share of SC/STs in total priority sector advances stood at 4.1 per cent in December 1980.

Courtesy:—

(PNB Monthly Review)

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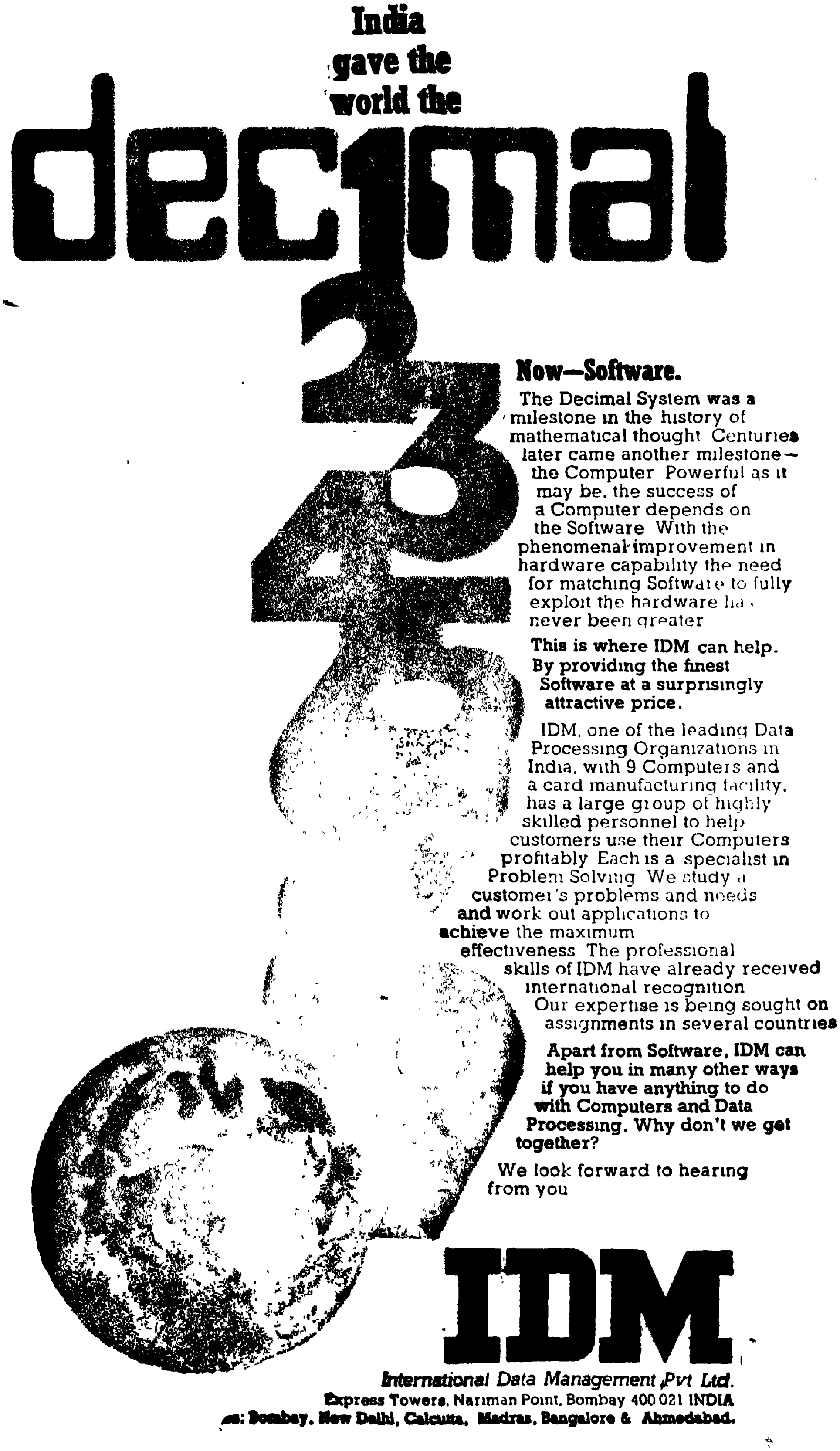

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INDUSTRIAL GROWTH IN THE EIGHTIES

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yojana

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Evaluation—an integral part of project management

NEXT ISSUE

Sixth Plan Mid-Term Appraisal

Rehabilitating Bonded Labourers

OUT OF 1.57 lakh identified and freed bonded labourers till June, 1983, 1.16 lakh had been rehabilitated. During the first quarter of this year over 8,000 bonded labourers had been rehabilitated against a target of 28,804 set for the year 1983-84.

For effective rehabilitation, an integrated approach with other on-going schemes in sectors like Rural Development had been undertaken. It is estimated that against a tentative outlay of Rs. 31.60 crore, the requirement of funds for completing the task of rehabilitation during the Sixth plan period may touch Rs. 46.50 crore.

To accelerate the pace of rehabilitation, the procedure for sanction and release of funds to the State Governments had been decentralised. All rehabilitation schemes will now be screened and sanctioned by the State Governments at the state level. After sanction of the scheme, the States will release their full share of grant to the District magistrates in single instalment. The Central Government will also release in full the Central share on receipt of the release order.

In order to secure simultaneous identification and release of bonded labourers the Government has suggested to the states summary trials. In the formal process of trial there was gap ranging between two to four weeks and in some cases six months to two years.☐

YOJANA

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Industrial growth in the eighties

Indian industry in the eighties will have to effect substantial enhancement of manufacturing capacities, accelerating pace of industrial investment, a thrust in development of new industrial production of capital goods at increasingly competitive prices, new strategies for the development of backward regions, reduction of regional disparities, a great impact on employment through industrialisation, etc., the author discusses.

Mohammed Fazal

INDUSTRIAL DEVELOPMENT plays a crucial role in our strategy for achieving the objectives of structural diversification, modernisation and self-reliance in our economy. The progress of industrialisation in the past three decades has been a striking feature of Indian economic development. Industrial production has gone up by about five times during this period, while at the same time the industrial structure has been widely diversified, covering broadly the entire range of consumer intermediate and capital goods. In most of the manufacturing products, the country has achieved a large measure of self-sufficiency, providing the capability to sustain the future growth of vital sectors of the economy primarily through domestic effort. This is reflected in the composition of our international trade, wherein the larger share of import of manufactured products has steadily declined; while a substantial portion of our exports now consist of industrial products, and particularly of engineering goods. These rapid strides in industrialisation have been accompanied by a corresponding growth in technological and managerial skills, not only for efficient operation of highly complex and sophisticated industrial enterprises, but also for design, for planning, and for construction activities. Considerable achievement has been made in absorbing, adopting and developing industrial technology.

Industrial growth

While in the initial 14 years of industrialisation, a steady industrial growth rate of 8 per cent was achieved; this was largely aided by a substantial scope for import substitution, as also a captive market, and the fact that the initial industrial base was small. In subsequent years there has been a fluctuating trend in industrial growth when a high growth of 9.5 per cent was achieved in 1976-77 while negative growth rate or stagnancy was experienced in 1979-80. Then in 1981-82 industrial growth was 6.5 per cent. This is because industrial production in the current phase of our development is conditioned by the general pace of economic development and the economy is now more exposed to the changing international environment than it was in the past. While no single factor can be identified as having a significant bearing on the rate of industrial growth, a close relationship is discernible between the trend in investments, and industrial growth. However, industrial growth is further affected by factors relating to infrastructural and other vital inputs, namely, power, transport, coal, cement and also industrial relations, and, quality of management.

Energy cost in strategy of planning

While the Indian economy showed remarkable resilience in confronting the first round of oil prices increases in 1973 and 1974, a second round of increases commenced in 1978; and since then, oil prices have risen substantially in real terms and have adversely affected the foreign exchange position Energy cost, therefore, would continue to play a major role in the strategy of planning in the 80's. Again world wide inflation in the recent years has had its impact on cost of imported equipment leading to a relative dampening of industrial investment activity because of increase in cost of projects. With efforts relating to resource generation already having reached high levels, as compared to what the economy can sustain, and with savings at present in the country being above 22 per cent (which incidentally is amongst the highest in the world), the scope for major generation of additional resources is limited. These factors taken together highlight the need for a few major aspects of adjustment in our growth strategy. These are: (a) immediate need to restructure our investments, and considerably improve their productivity, (b) the need to reduce the dependence on imports generally (and on energy imports in particular), (c) the need to economise considerably on capital expenditure on individual projects with a view to reducing considerably unit cost of production, (d) considerable improvement in quality of management, (e) strict quality control in production activities using statistical quality control methods, (f) strong measures for good maintenance of production assets, (g) great thrust on improvement of systems, greater use of computer, scientific data, collection and its use for optimum efficiency of management, and (h) the urgent need to revive expansion of exports.

International economic order

The existing international economic order is now in a state of fundamental disequilibrium. Also, it has generally failed to ensure promotion of development of the developing countries. It is fully recognised that there is need for a new international economic order, which would provide for a better deal for the developing countries, and provide for increased transfer of resources (both financial and technological) from developed to the developing countries. In recognition of this in 1975 the Lima Declaration called for adopting a target as such that developing countries should contribute 25 per cent of the world industrial output by the year 2000 A.D. In actual practice the share has moved only marginally to about 9 per cent, as of now, and the target of 25 per cent is not likely to be met unless major adjustments in the economic order are implemented. Although efforts have been made by the various international organisations (and at international conferences) to generate a commitment on the part of developed countries to increase the international flow of funds and of technology to developing countries, in actual practice nothing concrete has been achieved. On the contrary, in the wake of continuing inflation in developed countries, and also the connected problems of recession and unemployment, there has been a retrograde development (from the point of view of the developing countries) in that, protectionism on the part of developed countries is gaining momentum. Thus, not only would there be no additional fund flows (which the developing countries need for aiding their industrial growth) in the near future, we would also have to grapple with the problems of protectionism in developed countries, and the impact this would have on our own balance of trade position.

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*Speech at Delhi Chapter of Society for International Development, NCAER, New Delhi, June 24, 1983

Improving India's international competitiveness

This development is expected to cast its shadow at least in the 80's if not beyond. This focuses on the need for us in India to improve our international competitiveness, as well as to improve our technologies, and to improve our productivity to meet these challenges. In this context, the most important responsibility falls on the development of managerial effectiveness to deal with these emerging tasks and constraints. Further, our research and development activities and innovative capabilities in all spheres of economic activities would, therefore, be stretched to the full in the coming decade. We have indeed to aim at excellence in all these matters.

Strategies in eighties

With a growing economy and a growing population, and with special thrust that is to be given in the coming years for an economic development of the rural sector, certain parameters of the industrial development strategy which would need to be implemented during the decade, would need to encompass the following:

(a) Substantial enhancement of manufacturing capacities, so as to provide not only consumer goods, and consumer durables, but also for supporting agricultural and industrial growth through supply of intermediate and capital goods;

(b) The pace of industrial investments to be speeded up so that manufacturing capacities are in position well ahead of the demand for them so as to permit competitive market forces to operate, and to avoid possibilities of shortages, with attendant adverse affect on the economy; .

(c) A thrust in development of new industries (such as electronics) as also in the development of alternative energy sources. Further, there would be an essential thrust to reduce the energy intensiveness of our processes, and products, on overall basis;

(d) Production of capital goods at increasingly competitive prices, so as to reduce the cost of investment in new projects, with a view to aiding the accelerated development of the economy. This would also support the exploitation of the export potential in a larger measure than hitherto;

(e) The evaluation of a suitable technological development strategy; with a selective blend of permitting import of contemporary technology while at the same time promoting the development of indigenous know-how; and its continuous improvement;

(f) New strategies for the development of backward regions, and the reduction of regional disparities;

(g) Enhancement of the capacities and capabilities of the infrastructural sector (such as transport, power, ports, communications, etc.) so as to be in position ahead of requirements, and also to provide a cushion of capacites in the infrastructure for dealing with sudden additional demand fluctuations from time to time;

(h) Strategies for getting a greater impact on employment through industrialisation, which has not been adequately achieved so far;

(i) Increasing the international exposure of our industry to competition;

(j) Expanding our export activities in industrial goods, in a substantial manner, on the basis of a well thought out strategy for creation of additional capacities in selected sectors, and giving necessary support for rapid entrance into international market;

(k) More judicious use of our natural resource endowments, such as minerals (e.g. through increased use of beneficiation), power (e.g. through a more enlightened pricing policy to consume energy) and so on;

(l) Special efforts to reduce fragmentation of capacity and setting up of sub-optimal sized plants. A suitable thrust to give priority to expansion schemes of existing units;

(m) To eliminate completely time overruns of projects by efficient and modern project management techniques;

(n) To ensure strong financial management of new projects so that cost of completed projects are in the neighbourhood of the original estimated cost related to the starting period of the projects plus the compounded rate of inflation during the time of implementation of the project;

(o) Measure to improve utilisation of capacities already installed;

(p) With very cheap industrial labour, supervisory and managerial staff in India as compared to developed countries, it should be goal to ensure that unit cost of goods, manufactures, and services should be much lower than in developed countries; and

(q) Considerable improvement of the quality of management.

Many of these aspects have been reflected in the Sixth Plan 1980—85, and in the Industrial Policy Statement of July 1980, which goes into specific details of the strategy being adopted in the context of these problems, and the national objectives. The challenges, as we face them today, do not have a limited perspective of the Plan 1980—85, but have a long-term perspective. Thus the development of the necessary strategies will have to be a continuing process.

Government policies

The programme and policies of the Government will find shape through various measures of which two important aspects are (a) public sector investment and (b) investment priorities through financial institutions. The public sector has already constituted in no small measure, to the development of the necessary industrial and socio-economic structure of the nation. In the coming decade its role will need to be further re-inforced as it moves increasingly into developmental activties particularly in the States However, a more specific challenge is to generate adequate internal resources both by the public and private sectors to help tide over the overall resource constraints faced by the country for supporting the economic growth needs, through adequate investments, and capital formation. The financial institutions in turn will be faced with increasing problems of investments in selected sectors, and to devise appropriate methodologies to avoid the problems of the past with tendencies for industries to go sick, and the need for getting the entrepreneur to make a larger share in risk capital. The management of industries and also banks will have to be much more efficient, and cost conscious. The nation cannot afford a high cost economy. The exploitation of the colossal captive market of the country will have to give place to availability of goods and services at minimal costs, and high quality standards.

New phase of Indian industry

To sum up, Indian industry has entered a new phase in its development. In many sectors of the industry such as machine tools, textile machinery, power equipments, material handling equipment, steel plant equipment, machinery for petrochemical, fertilizer, cement industries etc. the industry is in a position to plan for major initiatives even on an International basis. The country has the factor advantages in terms of cheaper labour cost, as also abundant availability of well-trained engineers and experienced managers and technical labour force, scientists, etc. These aspects are likely to receive adequate attention in the present decade.

Challenges of eighties

Further, there would be major challenges for meeting the overall financial flow requirements for development. In the Plan 1980—85, a special thrust has been identified for borrowing on commercial terms in the international market. This has become feasible on account of the credit worthiness of India.

The industry is presently faced with a multitude of challenges, which would test the mettle of our industrial structure, and the efficiency and ingenuity of our planners, and managers. India has the potential of becoming a Great Society. Let us all work with a sense of dedication, optimism and adventure to make this possible in our life time. I am confident this can be done.☐

OIL adopts Gobar Gas Plant

OIL INDIA LIMITED is experimenting with low technology sources of energy that will provide cheap and renewable fuel on a continuing basis.

Towards this end OIL has installed a pilot plant that will produce gas from gobar (cow-dung) at the house of an employee of the company who lives in Ushapur village on the Duliajan-Digboi road in Assam. Taking the design from the Khadi and Village Industries Commission, OIL set up this experimental plant which has a capacity of producing 4 cubic metres of gas per day. The total cost of the plant comes to approximately Rs. 10,000.

The gobar gas plant was constructed by the OIL's Civil Engineering Department and commissioned on February 5. To keep a plant of this size running, the cow-dung collected from seven to eight cows over a 24-hour period would be required.

The calorific value of the gas is 4205 kilo calories per cubic metre : and the composition of the gas is 55 per cent methane and 45 per cent carbon-dioxide. The 4 cubic metres of gas provided every day is sufficient for cooking food for 10 to 12 persons or for burning two 100 CP lamps for 12 hours. Alternatively this energy can be used for running one H.P. engine for eight hours. Furthermore, the manure value of the cow-dung is not lost. In fact for use as fertilizer the manure is enriched in nitrogen value after it goes through the process of digestion of the fermentables once the gas is extracted from the cow-dung.

OIL has adopted the gobar gas plant to propagate the use of such fuel in the neighbouring villages where firewood is rapidly becoming scarce. OIL will also monitor the performance of the plant, use it for the trial of other feedstock, and for the cathodic protection of the gas holder.

In OIL's Integrated Rural Development Scheme under the Social Obligations Programme, the company plans to construct two or three community gobar gas plants, each of which will provide cooking fuel for about 25 house-holds in a cluster. ☐

Evaluation—An integral part of project management

Evaluation should become a normal administrative practice. By evaluating progress of the programme, it is possible to identify barriers, if any, to its time bound successful implementation. It is possible to suggest ways and means to overcome the obstacles. A project's watchful monitoring through concurrent evaluation for translating action into desired results is an important aspect of project management.

Dr. G. S. Kamat

PROJECT APPROACH to the process of economic development has assumed a good deal of significance in the developing countries in the recent past. One of the basic reasons for this is the scarcity of resources for investment. This necessitates a conscious endeavour on the part of the project planners to make the best use of the available sources. To accelerate development on sound lines at the unit level and consequently its logical extension to the level of the national economy, it has become extremely necessary to identify large number of potential projects in the priority areas on a national basis. Thus, good projects are the base of economic development.

Preparing a feasible development project is no guarantee to its quick and successful implementation. Yet, there is a dearth of well-conceived viable projects noticed in many vital areas of the economy. In haste and hurry projects are seen formulated and funds are diverted to less productive and less socially urgent sectors. There are vast areas still remaining uncovered for which useful projects can be and are yet to be developed, based on already available resources. Especially, a vast amount of imaginative work is required in planning programmes for the poor who are increasing in number, plan after plan.

Complacency

Whatever projects that are formulated, whether at the organisational level or for a composite areas, project planning and management continue to remain old fashioned. Shortages all round and sheltered market prevailing within the country have contributed to adoption of a complacent attitude to the needs of carefully prepared projects. But the costs are continuously going up and emerging new technologies are also adding to the complexities of implementation of projects and programmes. It is, therefore, necessary that right projects are taken up to conserve time, energy and resources. Priorities may be determined for the purpose from the point of view of economic development of the country.

The project planner has to work out a basic approach or strategy to implement the project in relation to the set objectives; comparing results with the objectives while on the way and taking corrective action when necessary. Sometimes such a corrective action may require rearrangement of objectives or a deviation in strategy or reappropriation of resources in the context of tasks to be achieved within a given time. A project planner, therefore, must have knowledge of surveys and both qualitative and quantitative analysis. He has to base his alternatives on economic calculations, co-relating costs with benefits accruing to the firm and the economy at large. He has to devise a system which, through proper decentralisation, yet in a disciplined manner, can secure for him the minimum necessary control for monitoring it in the already set direction in terms of time and cost. Monitoring is a continuous function which is intended to implement the project through adapted strategies, avoiding and safeguarding against hazards within agreed time limits.

Provision for evaluation

Sound projects satisfy the economic criteria of efficiency. At the stage of formulation itself, therefore, provision should be made for assessment of results. Systematic evaluation should become a normal administrative practice. By evaluating progress of the programme, it is possible to identify barriers, if any, to its time bound successful implementation. It is possible to suggest ways and means to overcome the obstacles. While it is a precondition that a project should be formulated on sound basis, its watchful monitoring through concurrent evaluation for translating action into desired results would ensure eventual success of the whole project. Thus monitoring and evaluation are important aspects of project management.

Three stage evaluation

There are three stages of evaluation :—

(i) Survey of the existing situation to establish a bench mark. Preproject or ex-ante evaluation is a kind of an appraisal which covers technical, financial, commercial and profitability analysis. Desirably the process of evaluation should begin at the planning stage, before a project is formally launched. Major project decisions and financial commitments are made at this stage only which bind the parties for a period of years to come.

(ii) **Concurrent evaluation.** It is a kind of internal evaluation conducted in stages during the period of the project. This is useful because it detects flaws and suggests remedial action in time for more satisfactory implementation during the remaining period of its operation. Internal evaluation gives operational control to project planners. It includes inspection, and reporting with reference to which implementation of the project is monitored and revised in order to determine action for fulfilling the stated targets and objectives. It helps introduce necessary modifications at the right time. This function is not intended to replace judgement but rather it makes available a tool by which judgement can be sharpened and probable errors minimised. The interim or tentative conclusions arrived at after internal evaluation are discussed with Managers, policy makers and other knowledgeable persons so that the scrutiny is more complete and a generally accepted corrective action is taken. The time element in evaluation is important. More of internal appraisal, introduction of scientific monitoring and feed-back, regular retesting of basic goals and modes of operation of a programme have many advantages to offer. This exercise covers entire gamut of operation and is a part of regular schedule. It is also taken up in the event of a break-down or emergence of a bottleneck or because of a growing feeling that things are not going on as well as they should. The internal, intermittant evaluation secures great deal of economy of effort, time, and resources because many of the facts are already known to the management, in the course of the implementation of the programme. Further it is the basic responsibility of the management for whatever performance recorded. Honest self-assessment speaks for the maturity of the management. Sometimes changing technical economic and institutional conditions may necessitate adapting the scope, objectives, strategies and design of an on-going project. A concurrent evaluation often suggests measures for increasing efficiency of project implementation and, if necessary for modification in the design that will facilitate expeditious implementation. Thus, the purpose of this type of evaluation is to produce some kind of objective evidence in terms of outputs which are set against costs of inputs. This may require quantification of goals and targets against which progress is measured and efficiency evaluated. In this sense it will be clear that evaluation is not an academic exercise but a tool to control design and promote improvement or savings. Internal evaluation keeps the project on schedule, amending it to take account of unforeseen snags and evaluate results from time to time. Especially projects of long duration suffer from a high degree of uncertainty.

(iii) The end of the project evaluation is done to assess the total result achieved. It determines in totality the degree of success of the project. This assessment provides useful guidance for similar, future exercises. The evaluation studies are basically diagnostic in character. Normally, a development project|programme aims at—

(i) improving productivity and structure;

(ii) raising operational income and per capita income; and

(iii) lessening income disparities.

Integrated evaluation

The project has to be realistic, feasible and is set to achieve targets which are normally not achieved by spontaneous and unplanned development. Commercial and national economic profitability are most important criteria for evaluating economic projects. Some other available criteria are using indigenous resources of men and material, employment generation in a decentralised manner as far as possible. In order to equate time difference in implementation of projects discounted methods are applied. Cost of major social overheads needed by the new establishments are also calculated and added.

Sometimes there is a great difference between the value of the project to the owners and to the economy as a whole. Thus, for example, a project for import substitution must lead to net saving to the users in the local market, which represents the cost to the economy. Similarly, some projects receive benefits of subsidy, concessions and investment of public funds. Projects fed on these, in the name of "national interest" can perhaps never be self-reliant and financially successful. A fair evaluation is thus, an inter-disciplinary and multi-dimensional exercise. The key to the problem under evaluation may be in the attitude, social structure, place of economic development, social priority, etc. The extent of coverage for purpose of evaluation will be determined by the constraints of time and availability of resources, both human and financial. These factors determine the parameters of enquiry (which are relatively subjective). They make evaluation not a mere science but also an art.

Methodology

Evaluation draws substantially on existing knowledge and experience. Useful material is available from secondary sources such as academic, government and other agencies in the shape of reports and policy statements indicating basis of programmes and priorities accorded to them with reasons. Interaction of the implementing agency with other related or concerned agencies is also an important area of enquiry and where public administration is involved, evaluation of the ongoing system of administration also becomes inevitable. In case of programmes expecting popular participation, community reaction in terms of benefits and categories of beneficiaries are particularly evaluated. Thus, evaluation does not limit itself to a mere statistical analysis for establishing significance and correlation between various factors, however significant. It also does a great

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What ails our panchayats

Yashavantha Dongre

VILLAGE PANCHAYATS ARE, probably the oldest organisations for Rural Development. But they have lost their old flavour. Efforts to modernise and politicise them have created more problems.

Financial difficulties are the common feature of all our panchayat institutions. They are always made to work with a grant, 'just sufficient to hold the breath'. There are panchayats which collect a Tax of around two to three thousand a year, and Government gives an equal amount of grant and subsidies but still it won't suffice. Many of the panchayats have finance sufficient for a tenth of their actual requirements. The move of giving the entire collection of entertainment taxes to the panchayats is a commendable one. This way at least those panchayats which have a cinema theatre within their territorial limits, can enjoy better financial status.

Autonomy

Panchayats are virtually bound by the string of bureaucratic regulations. It is logical that they should be given more freedom. Panchayats being at the mercy of Government departments can hardly deliver the goods. Making the panchayats more autonomous is the need of the hour. The members and the president, being local residents can fairly make out the needs and requirements provided they enjoy the necessary discretionary power.

Sense of responsibility

One of the greatest tragedies of our panchayats is its staff. Right from the chairman to the members, everyone avoids responsibility. (We do have the exceptions). The statutory obligation of a minimum of two meetings a month is rarely followed. Even the occasional meetings are poorly attended. With panchayats being less lucrative a business, many members do not find enough time to attend the deliberations. The prime factor behind this largely seen apathy is the lack of proper training and education.

It is pleaded here that the Government should impart necessary training to the elected members. At least the president and secretaries of all the panchayats may be made to assemble together at the Taluk level for a week long training. Voluntary agencies interested in rural development may also take up such ventures.

Politicking

No candidate can contest election for panchayats on a party ticket or symbol. However, it has become an accepted rule to estimate the popularity of a political party, on the results of the panchayat elections because no candidate is non-aligned. Only candidates with political affiliations manage to get elected. Political interference should be minimised at panchayat level.

Co-ordination

Panchayat Raj Institutions lose their identity if separated from the Government machinery. The Tahsildar and the Block Development Officer, the panchayat extension officer, village accountant and gramasevak, all have a say in moulding the activities of the panchayat. But there is lack of co-ordination among these officials and between the Government officials and the members of the panchayat. Excessive Government control is the prime factor governing this state of affairs.

Effective co-ordination is the immediate requirement. The feeling of oneness and co-operative attitude can not be brought through legislations. Hence the only alternative is to avoid the superior-subordinate feeling wherever possible and to make it participative co-ordination.

Diversified functions

There has been some confusion as to the exact functions of the panchayats. They range so widely both in the coverage and the financial outlay, that the panchayats fail to perform all of them. The functions should be specific.

The problems are definitely not impossible to solve. But what is required is the 'will' to be liberal on the part of the Government and to 'listen' and 'act' on the part of the panchayats. The officials, being the mediators, interpreters and agencies to get the things done, should soften themselves to match these requirements. If this be the case there is no reason why the panchayats should not be the leaders of Rural Development. ☐

Micro irrigation in rural India

The author discusses micro irrigation herein and how it can help generate more employment in agriculture sector of rural India. He says the capital cost of irrigation pumps with an element of subsidy is designed to benefit marginal farmers in a big way.

C.R. Bhattacharjee

IRRIGATION is the need of the day. The country is yet to cover vast potentials available for irrigation. No doubt few states have advanced substantially in this regard, but many others are still lagging far behind. Irrigation coupled with high yielding variety seeds, fertiliser, plant protection measures etc. can only improve the economy and consequently ensure more employment in agriculture sector of rural India. The present methodology of irrigation are classified as—

(i) Large|Medium irrigation through barrages| dams, canals etc.

(ii) Minor Irrigation through pumps.

The size of irrigation projects under first category benefits large number of cultivators and normally have comparatively big command areas. The investment in this sector is too heavy and gestation period is long. On account of various factors the time-frame for completion of such projects are getting prolonged calling for more than the estimated project cost. Once completed this project ensures benefit to a large number of cultivators with minimum of recurring cost. Under second category, i.e. Minor Irrigation Projects, command area is small and investment required is also less and number of beneficiaries are also far less. Minor Irrigation Projects again consist of low lift pumping from river water or shallow-wells and deep tubewells harnessing underground water table below.

With resource constraints, habitation and ecological problem and long period of gestation, planning for large| medium irrigation projects is posing problems. Minor irrigation projects are gaining priorities day by day. Electrification of pump-sets for minor irrigation is an yardstick scrupulously monitored by the State and Central Governments. Irrigation is a remunerative preposition for the cultivators as evident by the fact that well-to-do farmers go in for diesel pump sets even in these days of high cost of fossil fuel. The economics of irrigation expressed in terms of per acre annual cost is worked out below and is an attempt to study comparative aspects on a common base. Irrigation for its investment necessity, may it be in the large, medium or minor irrigation sector would continue to remain as a Government or a co-operative venture where cultivators holding are small and they can hardly finance such schemes

Solar photovoltaic pumps

This paper deals with a subject as a shift from conventional system of irrigation. The concept is micro-irrigation for command areas as small as 2 to 3 acres by solar photovoltaic pumps. Such command areas may not even fall under single ownership but shared by as many as 3|4 cultivators, Where marginal farmers are predominant and where they live at a hill top and water flows, along small rivers with either side of the bank having potentials for irrigation, Solar P. V. irrigation pumping sets were experimentally set up in Tripura. The result proved to be encouraging so much so that three tribal families, to start with, became self-sufficient in their good requirement. Implementation of any scheme depends on how such schemes are accepted by beneficiaries. Acceptance of these pumps by the beneficiaries in terms of shortest period of implementation and providing trouble free operation made them enthusiastic. In fact, they have been asking for more and more. It may be worthwhile to point out here that water from minor irrigation sources in Tripura is supplied free to the cultivators.

A brief description on Solar PV pumps is discussed now. Sunlight can be directly converted into electricity by means of semi conductor devices called solar photovoltaic (P.V.) cells. An interconnected assembly of solar cells is called a module. Modules are themselves interconnected to constitute an Array, the photovoltaic energy sources which can supply energy to any electrical appliances. In solar micro irrigation, energy from solar PV array runs small pumping set. The system designed by M|s. Central Electronics Ltd. consists of 20 modules placed in hermetically sealed unit with a toughened glass cover on top and terminals coming out and leading to a DC motor coupled to small pump. On a bright sunny day the solar system develops 75 volts and current output of 4 amps. The pump can lift as high as 30,000 litres of water on a full sunny day at a 5 M head.

The whole equipment is a compact unit 'array' system supported on a stand. The unit can be installed on small foundation at any place. There is scope for shifting, one place to another in case of necessity. They have no electrical hazard, voltage being too low. These pumps can be installed anywhere within a period of seven days. Compact unit consisting of array, pumps, supports, etc. do not weigh much and can be carted through head-load or by a jeep. Annual output is adequate to irrigate 2-3 acres of land depending on topography. Annual maintenance poses no problem. The suction consists of a small pipe with a foot valve and delivery is arranged with those pipes providing scopes for shifting from one field to another. Conventional pumps of 5 HP with higher draw down on suction can not be particularly suitable for installation in a small stream where discharge is low, whereas these pumps can gainfully utilise small quantum of water

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Area and production of Barley in India

Barley being a poor man's crop, has received low priority. It is, therefore, little wonder that the area and production of barley, especially after introduction of high-yielding-varieties of wheat, has been steadily going down in all the States. One should not be surprised if barley ceases to be a crop of any importance in the States of Punjab and Haryana in course of the next decade.

Dr. Vidya Sagar

Barley has been one of the oldest cereals in the world. Barley offers more varieties adaptable to a greater range of climate than any other cereal with types suited to temperate, sub-temperate or tropical area. Barley ripens in 90 days.

In India barley, of which cultivation is usually confined to the north of 24°N, occupies an important place by virtue of its adaptability to saline-acidic soils, to late sowing and to flood-prone (*dara*) lands. Generally, best lands with good irrigation facility are allotted to wheat, and barley is put as a mixture with it. In such conditions barley also receives irrigation with wheat. Therefore, it becomes rather difficult to work out the area of irrigated barley.

Barley has a nutlike flavour and is high in carbohydrates, with moderate quantities of protein, calcium and phosphorus, and small amounts of the B-vitamins. Due to low gluten, an elastic protein substance, barley cannot be used to make flour that will produce a porous loaf of bread, but it can be used to make an unleavened type, or flat bread, and to make porridge. In India barley is used in a number of ways, such as making *Chapati*, either alone or mixed with other cereals, *Sattu*, cattle feed, and processing into malt of the manufacture of beer, alcohol, and processed foods.

Outside India about half of the world's crop is used as livestockfeed, and rest is used for human food and for malting. Beer is mostly made from malted barley.

Area and production

Over the last fifteen years, while the total cultivated area in the country has been steadily increasing that of barley has been decreasing. During the quinquennium, 1950—55, the average area under barley was 3.29 million ha. It declined to 2.12 million ha during 1975—80. Thus the area under barley has declined by more than one-third over the last twenty-five years. Its share in the total cultivated area of the country has also been reduced to almost half, from 8.2 per cent to 1.67 per cent, over the same period.

The decline in the area under barley has also affected the total production of barley but the improvement in yields, from an average of 825 Kg/ha during 1950—55 to 1,088 Kg/ha during 1975—80, has partially offset this decline in the area. The decline in area under barley has been shared by all States. Since barley is generally grown in areas where it is not possible to take a good crop of wheat, improvement of irrigation facilities and availability of other resources have led to utilisation of the land area to more profitable crops like wheat.

Yields of wheat and barley

Increase in barley yields since the early sixties can be attributed to the introduction of improved varieties, better cultivation practices, and above all reduction in the marginal area under this crop.

During the period from 1960-61 to 1978-79, while the annual compound growth rate of area and production under barley has been negative, being of the order of 1.98 per cent and 0.37 per cent respectively the growth rate of yield has registered an increase of 1.61 per cent.

Barley in India is grown in all wheat growing States. The largest area under the crop, however, is in Uttar Pradesh, 0.82 million ha producing 0.76 million tons which is about 47.0 of the area and production under barley in the country.

The highest hectare yields of barley are obtained in Punjab (1,488 Kg.), and the lowest in Madhya Pradesh (406 Kg.). In three States, namely, Punjab, Haryana and Rajasthan, the hectare yields exceed 1,000 Kg. In Uttar Pradesh the per hectare yield of barley is 918 Kg. In other States the hectare yields hardly exceed 600 Kg. These variations in yields of barley in the States can be explained to comparatively longer growing season in Punjab, Haryana and Rajasthan, better cultivation practices and comparatively larger area under irrigation. In all the four States, where barley yields are about 1,000 Kg. per ha more than 50 per cent of the area under the crop is irrigated.

Generally the yields of barley obtained under irrigated conditions are 1½ times of those obtained under unirrigated conditions.

Barley in the Five Year Plans

India's Five Year Plans have paid scant attention to barley's development in the country. Due to non-availability of high-yielding-varieties of barley, the entire programme for barley improvement is based on traditional methods, which revolve round improvement of local varieties, and cultural practices. The Sixth Five Year Plan, 1980—85, envisages to increase barley production from 2.30 million tons in 1979-80 to 2.90 million tons in 1984-85, showing an increase of 0.60 million tons or 26 per cent over the five year period. Considering that both the area and production of barley have been decreasing over the last two decades, the proposed target of barley production appears to be unrealistic. Instead of showing a rise, it may even register a fall.

Co-ordinated Project

Realising the need to develop barley in the country, an All India Co-ordinated Barley Improvement Project was started in the Fourth Five Year Plan, with the following objectives :

(1) to breed improved barley varieties possessing resistance to yellow rust and suited to different agro-climatic conditions :

(2) to develop barley varieties for making malt and other industrial uses ; and

(3) to develop agronomic and plant protection practices for realising higher yields.

To achieve the above objectives eight research centres have been set up in all the important barley growing areas in the country. While during the Fifth Five Year Plan a sum of Rs. 27.59 crore was earmarked for the project, a sum of Rs. 47.12 crore has been provided in the Sixth Plan.

Barley being a poor man's crop, has received low priority. It is, therefore, little wonder that the area and production of barley, especially after introduction of high-yielding-varieties of wheat, has been steadily going down in all the States. One should not be surprised if barley ceases to be a crop of any importance in the States of Punjab and Haryana in course of the next decade. Only substantial improvement of yields and profitability vis-a-vis other competing crops can ensure a bright future for the crop in the country. □

(Continued from page 10)

under similar circumstances. Outage of these pumps is negligible and ensures irrigation whereas conventional pumps are prone to outage on account of many reasons.

P.V. solar pumps have their limitations as well. These pumps work on small head limited 5 to 6 metres and discharge is too small to maintain a sizeable command area. Replacement of carbon brush in villages need expert hand. The structural stability is still under improvement. Being exposed to rain, dust, storm, these pumps require regular check up at least to keep them clean. Overall efficiency of the system varying from 10 per cent—15 per cent is considered low. Economic and efficient performance of photovoltaic cells are both matters of mass-production and invites R & D activity.

In Tripura

In Tripura out of 2.54 lakhs hectares of cultivatable land 10 per cent of the land falls under less than .5 hectares holding and comprises 46 per cent of the land owners. Many of them are in hilly areas away from urban towns where potential of load growth for extension of Rural Electrification line is for the present not-so-bright. The tribals in such isolated pockets and water resources running nearby, are the beneficiaries. Till now, six pumps are running and 6 more pumps are being installed. The beneficiaries are 20 families and it is likely 20 more will be added in near future on installation of rest of the pumps. These people used to live on monocropping cultivation during monsoon and left with uncertainties and dependent on Government for transport of food to their places almost for six months a year. Solar photovoltaic pump has assured them three crops and adequate food for their consumption and selling outside. Adoption of agriculture programme along with micro-irrigation inclusive of a good cropping pattern, assistance on HYV seeds, fertilizer and plant protection measures, the result have shown good reception.

The cost of Solar P.V. Pump is broadly devided into three categories :—

(a) Solar array system.

(b) Balance of system.

(c) Installation.

Solar array system consisting of modules housed in a thick glass casing, is the major component. The balance of the system consists of supporting stand, tracking mechanism, D.C. Motor, pump etc. costs a sum within Rs. ,000. The erection component consisting of assembly, wiring, motors and pump sets installation is below Rs. 500. The segregated cost of the array and the balance of the system is not, however, exactly known. They are presumed to be in the ration of 85 : 15. Erection cost is only 5 per cent. The unit is so simple that except for the solar array system, the balance component can be manufactured and fabricated in many parts of the country. Their cost does not contribute to higher capital cost of the whole unit. The cost of the array system, as known to all, is high due to the necessity to import wafers.

The cost of these pumps works out as Rs. 70,000 per K.W. against the cost of one KW of conventional power to reach consumers being of the order of Rs. 30,000 taking into consideration, generation, transmission, distribution and consumer installation cost. In remote areas this conventional cost may be as high as Rs. 50,000 per KW and even then the investment may not be commensurate with load-potential to justify the same. The rising trend and denudable conventional energy-costing might play a role in favour of these pumps in near future. A quantification of cost of easy operation of P.V. pumps with negligible maintenance cost compared against quantification of similar costing of conventional pumps may ultimately prove the solar pumps economical in the long run.

Economy of operation of these pumps runs parallel to conventional ones. The capital cost of the pumps is high. There is absence of cost of operators and energy. Overall annual cost works out in Tripura almost same as conventional pumps.

The capital cost has, however, an element of subsidy at M/s. Central Electronics Ltd. level for sale to customers. In the context of change in energy scenario, in case an overall national costing is done the picture would change both in respect of conventional and non-conventional pumps. For the present to extend benefits to a deserving class of people and through a simple technology and also free from recurring dependence on other agencies, these pumps are important tool in rural India to assist marginal farmers.

Universalizing education

It is necessary to integrate education closely with economic development. It may be seen that the problem of non-enrolment and dropout is largely confined to backward and weaker sections living in rural and tribal areas and in urban slums. Poverty is one of the major causes of non-enrolment and non-attendence of the school age children amongst these groups. Mere provision of educational facilities in these areas may not promote education unless it is accompanied by massive doses of investment for the upliftment of deprived groups. There is a two-way relationship between the two: education and economic development. Both are complementary as well as supplementary to each other.

K.C. Nautiyal

OUR PERFORMANCE in implementing the directives of the Constitution in the matter of education has been rather inadequate. Even after 30 years of the adoption of the Constitution, education up to the age of fourteen is not free and compulsory in all the States and Union Territories. Out of 31 States and Union Territories four have yet to make Primary education for the age group 6-11 years free. 14 States and Union Territories have, however, enacted legislation to make education compulsory for the age group 6—11 years and there are only two States i.e. Tamil Nadu and Sikkim which have passed legislation for making education compulsory for the age group 6—14 years and 5—13 years respectively. Education, is however, free in as much as no fees, are charged from students in Government, local body and aided schools in classes I-VIII in all States and Union Territories as except for boys in classes VI—VIII in Orissa and Uttar Pradesh.

The position in the sphere of enrolment in the age group of 6—14 years as revealed by the Fourth All India Education Survey is as follows :

TABLE—1

Age-Specific Enrolment Ratio in 1978-79

Classes	Age Group	Boys	Girls	Total
I—V	(6-11 years)	76.3	51.3	64.1
VI—VIII	(11-14 years)	53.4	29.3	41.7

Source:—National Council of Educational Research : "Fourth All India Education Survey" New Delhi, 1982

According to the Survey the gross enrolment ratio for the elementary stage (classes I—VIII) works out at 66 (82 per cent for classes I—V) in the age-group 6—11 years and 38 per cent for classes VII-VIII in the age group of 11—14 years enrolment in specific stage irrespective of the age group supposed to be in school in that stage. The gross enrolment thus includes children below 6 years as well as those above 14 years of age. The age-specific enrolment ratio for the age group 6—14 years works out to 56 per cent (64 per cent for the age-group 6—11 years and 42 per cent for the age-group 11—14 years).

TABLE—2

Number of non-enrolled children during 1950-51 and 1978-79

(Figures in lakhs)

Year	6—11 years	11—14 years	6—14 years
1950-51	253	210	463
1060-61	152	239	441
1965-66	121	286	407
1973-74	150	381	431
1978-79	154	294	448

Note:—Figures are based on gross enrolment-ratios.

Source : Based on (i) Government of India Ministry of Education "Report of the Education Commission 1964-66" Supplementary Volume ; New Delhi, 1970.

(ii) National Council of Educational Research and Training

(a) "Second All India Education Survey", New Delhi, 1967,

(b) Third All India Education Survey, New Delhi, 1979,

(c) "Fourth All India Education Survey", New Delhi, 1982.

It is evident from Table-2 that for the last thirty, years the absolute number of non-enrolled children in the age-group of 6—14 years has remained some what stationary at around 450 lakhs. Even taking the gross enrolment ratio, the magnitude of the non-enrolled in the age of 6—14 years in 1978 was 448 lakhs. If we take age-specific enrolment figures then the magnitude of non-enrolled children in the age-group of 6—14 touches the figure of 597 lakhs. The absolute number of non-enrolled children recorded some decline during 1950-51 to 1965-66. After 1965-66 this trend has reversed and by 1978-79 their number has increased significantly.

At the existig pace of enrolment the task of covering the entire population in the age-group of 6 to 14 years with compulsory and free education will remain intractable or as Hallak prophesies "an illusive one" even by 2000 AD.

Search for missing links

Thus, more than 40 per cent of children remain deprived of education and are denied the right to education. They represent the "hard core" of population belonging to the weaker sections of the society in rural and tribal areas and in urban slums. In this context it may be pointed out that during the past three decades of planning, despite formidable constraints, the country has been able to push up some educational infrastructure in rural and tribal areas and urban slums. According to the All India Fourth Education Survey over 93 per cent of rural population was being served by primary schools or sections located either in the habitation or within a walking distance of 1.5 km. Similarly, middle schools sections were available for nearly four fifths of rural population either within the habitations or within a distance of 3 kms.

Thus the real bottleneck in the development of education is not only the lack of infrastructure, or non-availability of facilities. There is an old saying that one can take a horse to water but cannot make it drink if the horse is not willing to drink. The setting up of schools, provisions of a host of subsidies and other facilities in terms of freeship, mid-day meals, free uniform etc., may not necessarily ensure desired enrolment. There are some crucial "missing links" which need to be identified and tackled to enhance the "capacity" and "willingness" for education.

It, is however, not very difficult to trace the "missing links" if one studies the relationship between education and poverty. In fact there is close nexus between the two and both constitute an integral part of the development process. There are scores of research studies which clearly demonstrate that economic prosperity and modernization whether of individuals or of society move together with educational development. The economic development creates the situation whereby education is needed to support it. It is education that enables one to man the development and reap the fruits of development. It is one of the basic input to development. The World Bank Sector Policy Paper on Education (1980) rightly perceives three major roles of education viz. (a) "as a basic human need", (b) "as a means of meeting other basic needs" and (c) "as an activity that sustains and accelerates over all development". It is basic input to "manage capital, technology, services and administration in every sector of the economy". (8) Thus education and development are closely interlinked and the *post hoc ergo propter hoc* is not easy to resolve.

Integrated approach

It is, therefore, necessary to integrate education closely with economic development. It may be seen that the problem of non-enrolment and drop out is largely confined to backward and weaker sections living in rural and tribal areas and in urban slums. Poverty is one of the major causes of non-enrolment and non-attendance of the school age children amongst these groups. Mere provision of educational facilities in these areas may not promote education unless it is accompanied by massive doses of investment for the upliftment of deprived groups. There is a two-way relationship between the two education and economic development. Both are complementary as well as supplementary to each other.

So far, it appears that the requisite thrust in the government's efforts for boosting up investment in rural and tribal areas has been rather inadequate. A study of investment pattern of public sector would reveal that the public sector has so far been concentrating in urban areas as its investment has been mainly confined to manufacturing and tertiary sector.

TABLE—3

Capital Formation by Public Sectors 1960-61 & 1976-77

(Rs. in crores)

Year	Agricultural Sectors	All Sectors
1960-61	78(5.51)	1422 (100)
1976-77	581 (4.4)	13140 (100)

It may be seen from Table 3 that in 1960-61 out of a total investment of Rs. 1422 crores, only Rs.78 crores i.e. 5.5 per cent was in agriculture. During 1976-77 this percentage dropped to 4.4 per cent. Thus, somehow, our investment policies have been showing bias against rural sector and as such the pace of educational and economic development in rural areas during past decade has been slow. The corrective measures in this direction have been waiting for long.

New deal in Sixth Plan

In the Sixth Plan added thrust is being given to promote investment in rural areas and backward areas through a variety of measures like Integrated Rural Development Programme (IRDP), National Rural Employment Programme, (NREP), Training for Rural Youth self Employment (TRYSEM), Draught Prone Area Programme (DPAP), Desert Development Programme, Special Plans for Scheduled Castes, Tribal and hill areas etc. to help poor by providing them facilities in acquiring productive technology and skills as would make their economic activities viable.

IRDP is a house-centred poverty removing strategy. During the Sixth Plan under this programme about 3,000 families per block i. e. nearly 15 million families with about 75 million rural population will be covered. A sum of Rs. 1,500 crores has been earmarked under this programme which aims at providing subsidised loans to marginal farmers and landless workers through nationalised banks and further a sum of Rs. 3,000 crores would be made available to the rural poor through rural banks and other financial institutions. Similarly, various developmental agencies as district level i.e. District Industries Centres are being set up for creating self-employment facilities. Each District Industry Centre is being given a target of creating job opportunities for 2,500 families. Thus the jobs created through the District Industries Centres would be about 1.1 million. Similarly, Operation Flood II Dairy Development Project and other dairy development schemes are expected to benefit about 13 million families. The village and small scale industries sector as a whole is likely to cover 9 million families. NREP is also likely to generate employment for about 400 million working days. Under TRYSEM, 2 lakh rural youths are to be trained every year for self employ-

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Indian Economy at the Crossroads

The author discusses the financial trends observed in various sectors of the Indian economy in 1982, the Year of Productivity.

Shankar Dev

THE PERFORMANCE of the Indian Economy in 1982, the year of 'productivity' has been far from satisfactory though there was near stability in the price level and improvement in infrastructure. A sector-wise view would provide a clear picture of the trends that prevailed in the economy in the previous year.

Agriculture figures indicate that though in the agricultural year 1981-82, production touched an estimated record level of 133.06 million tonnes, it was still 5.44 million tonnes short of the target. For 1982-83, the kharif output is expected to be around 70 million tonnes, quite lower than the targetted 85 million tonnes due to the successive occurrence of drought and, floods in many parts of the country. If the rabi production does not show compensatory improvement, the total production of foodgrains will be around 124 million tonnes.

The tempo of industrial revival which was high in 1981-82 slowed down in 1982-83. The average growth during the current financial year so far is no more than 4.1 per cent against 10.7 per cent growth in the same period in 1981. Declining output was recorded in industries like textiles, tea, soda ash, tractors and paper and pulp. They are also facing sluggish demand which is attributed to indiscriminate imports, credit squeeze and poor purchasing power

Sharp deterioration

Sharp deterioration in industrial relations has hampered industrial growth. The continuing 11-months old Bombay Textile Strike has resulted in the loss of 48 million mandays, production loss of Rs. 750 crore and an export loss of Rs. 175 crore till now.

The year end review of foreign trade and balance of payments revealed that the performance of exports in a number of primary and manufactured commodities improved significantly even though certain agricultural commodities suffered a decline. Foreign exchange reserves have declined greatly from Rs. 5220 crores on March, 31, 1979 to Rs.3333.47 crore on Dec., 17, 1982 (includes withdrawal from I. M. F. loan) mainly due to imports of petroleum and petroleum products and wheat. However, the trade deficit for April—Sept., 1982 at Rs. 2605.30 crore is less than the deficit of Rs. 2817.35 crore for the corresponding period of last year with expectations of a lower trade deficit in 1982-83.

Budgetary gap for 1982-83 is expected to be much wider than the estimated Rs. 1,365 crore owing to increase in non-plan expenditure at the centre and in several States. The weak financial position of the States is reflected in their undue dependence on overdrafts.

The improvement in the position of bank deposits and investment in government securities by scheduled commercial banks because of credit policy relaxation has been accompanied by a slower growth of bank credit in the first seven months of the year.

To conclude, even though the Sixth Plan envisages an average annual growth rate of 5.2 per cent the poor performance of the Indian economy, will bring down the G.N.P. rate to well below 3 per cent compared to 4.5 per cent of the previous year. Weather accounts partly for this, but there has been slow investment in real and nominal terms. The economic scenario of India thus portrays a grim and indecisive situation with the image of recession gaining ground. ☐

(Continued from page 14)

ment enterprises in agriculture industry and service sectors. All these measures are expected to bring drastic fall in the percentage of population living below poverty line from 48 per cent in 1979-80 to 30 per cent in 1984-85.

The implementation of these massive programmes is likely to push up the demand for education on two counts, viz. : (i) the resultant economic betterment of families will enhance their "power to support" education and the (ii) the provision of credit facilities will induce the beneficiaries to acquire literacy skills for coping with the bureaucratic procedures and availing of the institutionalized credit facilities. The beneficiaries under various programmes will themselves experience the advantages of education which will have positive impact on promoting education of their children. It may, therefore, be safe to assume that during the Sixth Plan a large number of school going children of these families would be availing of education facilities. The success of bringing in 79 per cent of the school going population in the age group of 6—14 years (90 per cent in the age group of 6—11 years) within the fold of education by the end of the Sixth Plan, will thus to a large extent depend upon how effectively the anti-poverty programmes are implemented during the Plan. ☐

Promise of leprosy vaccine

Dr. Amita Deepak

The aim of Government for leprosy eradication by the year 2000AD, though appearing to be Ambitious, can be achieved if a nation-wide effort is made by people, voluntary organisations and the government agencies. With an effective vaccine just around the corner, the end of this dreadful disease could come sooner.

LEPROSY VACCINE is on trial. After several decades of research Indian scientists have developed an anti-leprosy vaccine at Cancer Research Institute of the Department of Atomic Energy in Bombay.

The vaccine has been tried in Bombay on patients who couldn't be cured by any other possible treatment. The results have been encouraging; 60 per cent patients showed generation of immunity and reduction in number of bacteria. The vaccine is now out for trials in major cities after clearance from the Drug Controller and the Indian Council for Medical Research. Hopes for the efficacy of vaccine are higher than ever before.

Leprosy, though not fatal, is a crippling and disfiguring disease. In India this disease, known as 'Maharog' or 'Kustarog', is considered as God-given punishment by a majority of people. The patients are made virtual outcases. Despite slight changes in attitudes towards leprosy patients, the apathy and indifference still remain.

Curable

Contrary to popular belief, leprosy is not always contagious. Leprosy is completely curable and the least infectious among the infectious diseases. It is now well documented that prolonged contact over years is needed for a healthy susceptible person to acquire leprosy. The rarity of the disease amongst medical personnel also shows that contact is a minor factor in transmission of leprosy. Genetic and immunological factors probably have a more important role to play than simple contact.

The World Health Organisation (WHO) from its inception has recognised leprosy as a major health problem and given priority to its control. Leprosy affected almost all countries in the world in the middle-ages but is currently limited to Asia. Africa and South America. There are about 18.6 million cases in the world. one sixth of which are in India. In our country leprosy is widely spread in the States of Andhra Pradesh, Bihar, Orissa and West Bengal. Out of 4 million cases in India. about 20 per cent are of infectious leprosy. A leprosy control programme was launched in 1955 by the government which has remained entirely ineffective and the number of leprosy patients has persistently risen from 1 5 million in 1947 to the present 4 million. The reasons for failure of the control programme are numerous. There is no simple test available for the early identification of leprosy, and since symptoms in primary stages are not very troublesome it fails to draw patients' attention. The chronic character of the disease creates further problems as patients fail to continue regular treatment for 2 to 5 years. Lack of facilities at the control centres for proper screening and treatment are also responsible for failure of control programmes.

Recent reports on emergence of drug resistance have caused acute concern and the WHO has advocated serious efforts at developing an efficacious vaccine. In the past drugs have been the mainstay for our control programmes—the aim being reduction of the disease by mass distribution of medicines. Powerful drugs like Dapsone and Rifamppilin were being used for curing the disease, but resistance to these drugs is now seen in vast number of patients. Though multi-drug therapy techniques are now in vogue, the results have not been encouraging. The BCG vaccine was believed to generate immunity in leprosy patients. But the trials carried out in Uganda, New Guinea and Burma by the WHO showed limited success. The Burma trial indicates that protection rate was not more than 15-20 per cent. Conflicting results of these trials led to banning of BCG vaccination against leprosy by WHO in 1970.

Breakthrough

The total failure of the control programmes, drug resistance and modern advances in the immunological techniques inspired the scientists to explore the possibilities of producing leprosy vaccine. Scientists in various institutions are trying hard for a breakthrough in this field. The British Overseas Development Administration and Government of India's department of economic affairs have agreed on an extension of a link programme until 1985. Under this scheme, eminent experts from UK are brought to India and Indian scientists in the field are sent on training visits to U.K. Recently Prof. J. L. Turk, a professor in the Institute of Basic Medical Sciences of University of London, and a member of the Royal College of Surgeons of England, was on a one-month visit to India. The main purpose of his visit was to assess the collaboration in various aspects of leprosy research between the Central JALMA (Japanese leprosy mission for Asia) Institute for leprosy at Agra and the National Institute of Medical Research in UK. Professor Turk. an expert in this area. believed that Western countries could help the developing countries better by training the scientists from these countries instead of sending their own scientists to work there.

The newly evolved vaccine of the Cancer Research Institute. Bombay is significant at it uses the radiation killed ICRC bacillus for the vaccine. These organisims are formed in the leprosy patients. But these bacteria do not cause leprosy. Their main advantage is that they can be easily cultivated in the laboratories and therefore large quantities of vaccine can be produced.

It is claimed that 60 per cent of the vaccinated patients have shown development of immunity. Over a period of 15 months of trial no untoward toxic side-effects have been seen. The persons chosen in Bombay were among the worst sufferers who did not respond to prolonged drug therapy. However the acceptance of the vaccine would depend upon further results from the human trials which are to be carried out in various major cities. Notwithstanding the promising aspects of vaccine, special precautions need to be observed for the toxic effects over prolonged periods of time. In the past, severe allergic reactions are known to have occurred in patients on anti-leprosy drugs or other vaccines.

Professor Turk, who has been working with cobalt-irradiated vaccine, in his enlightening lectures at the All India Institute of Medical Sciences cautioned the scientists in the leprosy vaccine field about his discovery of the fact that the local positive reaction caused due to subcutaneous injection of vaccine is allergic in nature. And it may not be of protective significance as believed till now.

First step

Therefore the present reports on the vaccine should be considered only as a first step in the right direction. There should be no soaring optimism till more reliable results are achieved and occurrence of any adverse effects totally excluded. A vigilant watch has to be kept on the effectiveness as the success is only 60 per cent in a single city trial. A wider acceptance of vaccine as an ultimate remedy to this disfiguring disease will take a few years.

As the vaccine has been tried only on the leprosy patients who are fully affected by the disease, one cannot be sure about the total immunity provided by the vaccine. The presence of leprosy bacteria in body system induces the production of antibodies and therefore certain amount of immunity is already present in leprosy patients. Therefore the number of patients tested by vaccine will have to be raised to statistically significant levels before the vaccine is out for mass production. Researchers are also exploring the possibility of cultivating more strains of leprosy-causing bacteria to develop a polyvalent vaccine for generation of stronger immunity.

Meanwhile, it is advisable to enhance the presently operating control programmes by pouring in more resources and man-power. The doctors should come forward and take up the cause in the rural areas. The aim of Indian government for leprosy eradication by 2,000 A.D., though ambitious, can be achieved if a nation-wide effort is made by people, voluntary organisations and the government agencies. With an effective vaccine just around the corner the end of this dreadful disease could come sooner. □

The sun in Indian kitchens

H. S. Nagaraja Sharma

IN THESE DAYS of energy crisis, any fuel saving gadget is welcome. One such device that has come to the market is Solar Cooker. It promises to become a precious fuel-saving gadget. Requiring only sun-shine to work successfully, the cooker does away with traditional fuels—gas, kerosene, electricity and fire-wood.

The Solar Cooker is as useful as any pressure cooker. You can cook rice, vegetables, mutton or fish, roast peanuts or seasame and heat water or boil milk. Whatever the recipe, it cooks well and adds its own good flavour.

Simple device

The Solar cooker is a simple device. It consists of a rectangular aluminium metal box whose inner surface is coated with a special black paint to absorb maximum heat from the sun rays falling on it. The top surface is covered with a sheet of double glass glazing. This glass glazing can be opened and the cooker pots can be placed in or taken out of the solar cooker. All parts and know-how are indigenous.

This simple instrument is the result of the search for alternative sources of energy, which is a part of the new 20-Point Programme. The Commission on Alternate Sources of Energy (CASE), set up by the Government of India, has entrusted the work of manufacturing and marketing of cookers to various State Governments. In Maharashtra, the Maharashtra Small Scale Industries Development Corporation (MSSIDC) has taken up this responsibility. In fact, it has already started selling cookers in the State.

Price within reach

The price of the Solar Cooker has been fixed so as to be within the reach of the common man. The production cost of the cooker works out to be Rs. 560. However its price in the market ranges from Rs. 310 to Rs. 410 as the Central Government and State Governments are offering subsidies. The Central Government's subsidy is Rs. 150 per piece. In addition, the cooker is exempted from sales tax, exise duty and octroi. Its life expectancy is 10 years but one can recover its cost within twelve months.

Today the Solar Cooker adorns many Indian kitchens. In Maharashtra, Gujarat, Rajasthan and other States quite a number of families are already enjoying the dishes prepared with the help of Solar Cooker. In Bhor Taluka of Pune district alone 23 Solar Cookers are in operation. Indeed, for them the expenditure on fuel has come down to the minimum.

A worshipper of the sun happily said, "Solar Cooker has brought the Sun God into my kitchen. By using the cooker, I feel, besides saving on fuel, I am also worshiping the Sun God better than ever before".

Over 8 lakh tribal families cross poverty line* in 1982

The scheduled tribe population constitute about 7 per cent of the country's total population. Planning for tribal areas presents a complexity which is not faced in the non-tribal, backward population segments. The tribal sub-plan concept adopted about eight years ago has helped over eight lakh tribal families to cross povery line in 1982.

TRIBAL DEVELOPMENT is based on a twin approach, namely, protection of their interests through legal-administrative support and promotion of developmental efforts to raise their level of living. The tribal sub-plan concepts adopted during the Fifth Five Year Plan period is now in its eight year of operation and continues to be the main instrument for tribal development.

The tribal sub-plan is an area development plan with particular focus and emphasis on development of tribal population. Coverage of the tribal sub-plan extends to about 20 per cent of the total geographical area of the 19 States and Union Territories to a scheduled tribe population of about 266.93 lakhs constituting about 74 per cent of the total scheduled tribes population. It does not cover the six States and Union Territories of Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Lakshadweep and Dadra and Nagar Haveli as the population of these States and Union Territories is largely tribal and therefore the state plan itself will take care of the needs of the tribal poulation.

The tribal sub-plan approach has three main components, namely, (a) tribal sub-plan as originally delineated during the Fifth Plan comprising mainly areas of tehsil|block level each with 50 per cent or more scheduled tribe population, including scheduled areas and erstwhile tribal development blocks; (b) pockets of tribal concentration, carved out during the Sixth Plan with a total population of 10,000 and a scheduled tribe population of 50 per cent or more and (c) primitive tribal groups.

New Thrust

While the earlier objective of strengthening the infrastructure in tribal areas remains valid, the thrust now is more towards programmes and schemes which aim at effecting socio-economic improvement of the individual tribal family. It is envisaged that 50 per cent of scheduled tribe families below the poverty line be raised above that line during the Sixth Plan period. This would mean increases in productivity levels in the fields of agriculture, horticulture, animal husbandry, forestry, industry, etc., provision of employment in the slack season and, above all, ending exploitation in the credit-cum-marketing field. The strategies in the respective fields have to be worked out by each state government in detail. The adjusted poverty line at 1979-80 prices has been placed by the Planning Commission at the figure of Rs. 75 per capita per month.

As per the 1971 census, the scheduled tribe population numbered 3.8 crores constituting about 7 per cent of the country's total population. They have been concentrated mostly in central India across the States of Orissa, Bihar, Madhya Pradesh, Andhra Pradesh, Maharashtra, Gujarat and Rajasthan. Composed of about 250 different communities and groups, varying widely in their level of socio-economic development, cultural background, personality psyche etc., they speak 105 languages. Each of these groups calls for a unique prescription for development. The needs of infrastructure of tribal areas are qualitatively and quantitatively very different from those of other areas. The population density is low, habitations widespread and modern amenities scanty. Planning for tribal areas presents a complexity which is not faced in the non-tribal, backward population segments.

Tribal Sub-Plan

The tribal sub-plan was initially expected to include all the scheduled areas and tehsils|blocks with more than 50 per cent tribal population. As per this approach, tribal majority States, namely, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Lakshadweep and Dadra and Nagar Haveli were not included since development plans of these States|Union Territories were primarily meant for the scheduled tribes themselves. However, according to the formulation, substantial tribal population was covered by the tribal sub-plans in Madhya Pradesh (74.83 per cent), Orissa (68.41 per cent), Bihar (76.75 per cent), Rajasthan (43.67 percent) , Gujarat (72.42 per cent), Manipur (93.71 per cent), Himachal Pradesh (59.15 per cent), Andaman and Nicobar Islands (99.45 per cent) and Goa, Daman and Diu (100 per cent). In other States where the tribal population was of lower concentration, these norms were relaxed with a view to covering a reasonable proportion of the States' tribal population; a minimum scheduled tribe population threshold of about 20,000 was adopted in delineating the tribal sub-plan areas in Maharashtra, Andhra Pradesh and Assam. In the case of Tamil Nadu and Kerala, the norm was further reduced to a scheduled tribe population of about 10,000. In Tripura and West Bengal groups of villages with more than 50 per cent tribal concentration were included. In Karnataka and Uttar Pradesh, where the tribal population is small and dispersed, family based approach was adopted.

The tribal sub-plan area was divided into 181 Integrated Tribal Development Projects for operational purposes.

Extended coverage

Under the modified area development approach to tribal sub-plan introduced during the Sixth Plan period, 21 more pockets of tribal concentration with a scheduled tribe population of 1.46 lakhs were added during 1982-83 raising the total number of pockets to 235 and the scheduled tribe population covered to 32.35 lakhs. These pockets were carved out according to a norm of 10,000 population with 50 per cent or more scheduled tribes in a pocket. Separate financial assistance is earmarked under special central assistance for these pockets.

During 1982-83, a target was set to assist 11,43,708 tribal families spread over 17 States and 2 Union Territories to cross the poverty line and according to figures available upto December 1982, 8,14,890 tribal families had received such assistance State-wise targets and achievements are given in the table given below.—

Assistance to Scheduled Tribe Families to Cross Poverty Line 1982-83

Sl. No.	State/U.T.	Target	Achcivement (Upto Dec. 1982)
1	2	3	4
1.	Andhra Pradesh . . .	38,600	24,068
2.	Assam	63,749	41,646
3.	Bihar	50,000	56,111
4.	Gujarat	70,000	49,220
5.	Himachal Pradesh . . .	8,645	14,581
6.	Karnataka	3,650	4,319
7.	Kerala	3,205	2,036
8.	Madhya Pradesh .	1,50,000	32,281
9.	Maharashtra . . .	4,99,000	3,36,520
10.	Manipur .	7,769	6,330
11.	Orissa	1,02,500	43,680
12.	Rajasthan	22,000	21,735
13.	Sikkim . .	1,200	2,339
14.	Tamil Nadu .	3,150	2,712
15.	Tripura . .	54,876	92,351
16.	Uttar Pradesh	3,000	2,487
17.	West Bengal . .	57,364	75,822
18.	Andaman & Nicobar Islands	3,700	6,046
19.	Goa, Daman & Diu .	1,300	606

The tribal sub-plan is implemented through resources drawn from: (a) State Plan flows; (b) Special Central Assistance of the Ministry of Home Affairs; (c) flows from central and centrally-sponsored programmes; and (d) Institutional finance. The Sixth Plan provision for Special Central Assistance is Rs. 470 crores. The outlay for 1982-83 was Rs. 95 crores. The state governments have been advised to utilise the Special Central Assistance on programmes that would promote individual beneficiary schemes or to fill critical gaps in particular sectors of development

Primitive Tribes

Special emphasis has been laid on improving the lot of extremely backward tribal groups. On the basis of the norms of: (a) pre-agricultural level of technology; (b) low level of literacy; and (c) stagnant or diminishing population, 52 tribal communities were identified till the end of 1981-82 and during 1982-83, 19 more such groups were identified.

Detailed guidelines have been issued to the States in regard to the preparation of project reports and implementation of programmes for the identified primitive tribal groups, which will be uniquely related to the groups' specific life style needs. A provision of Rs. 15 crores exists for the programme during 1980—85. Assistance to States for this programme is on 100 per cent basis. The outlay for 1982-83 was Rs. 3.74 crores. □

Priyagni—the new wood burning stove

A HIGH EFFICIENCY wood burning stove, developed by the Central Power Research Institute, Bangalore has entered the market under the trade name "Priyagni".

The stove has a well directed and centred airflow in the fire chamber. It allows optimum quantity of air to mix with fuel, thus eliminating smoke. It needs no blowing. The stove has recorded a thermal efficiency of 30 p.c.

It has a cylindrical combustion chamber, closed both at the top and the bottom with slotted bottom plates. An aluminium sheet lining of the combustion chamber reflects heat and reduces wall radiation loss.

Stoves of three different sizes are available to suit all types of requirement. The prices vary between Rs. 30 and Rs. 60.

Attention to support the fuel sticks horizontally in the combustion chamber should be paid so that the flame is properly centred. Stuffing the chamber will produce smoke. Damp fuel should not be used in the stove.

The increased thermal efficiency obtained from the stove will enable an owner to recover his investment in about 3 months time.

Research at the Institute has established that lining a conventional mud chulha with an aluminium strip reflector will increase its thermal efficiency to 25 p.c. Their normal thermal efficiency is only about 10 p.c.

Most rural women suffer from smoke-induced diseases of the lungs and the eyes The smokeless Priyagni will be a boon to them.

Priyagni has also to be evaluated in the context of our diminishing forests. It is calculated that the value of oxygen, soil conservation, water retention, raw material for domestic and industrial use etc., provided by one tree, is around Rs. 15 lakhs a year. Still, we in India, burn one tree per everyman for cooking in the kitchen. And we get only about 5 to 10 p c. efficiency from the 1500 lakh tonnes of firewood we burn in our stoves. Priyagni can be the solution to this "burning" problem. □

Planning perspectives of desert development

Desert development programme is directed towards controlling desertification and mobilising human resources to generate employment and increase productivity in the desert areas. The author urges the planners to accord top priority to the hitherto-neglected desert areas.

Virdhi Chander Jain, M.P.

JAWAHARLAL NEHRU had rightly said that Planning was a "Continous movement towards desired goals." Ever since the beginning of First Five Year Plan in April 1951, India's plan strategists have chiefly been concerned with "growth", attainment of "Self-reliance" and eradication of poverty. More than three decades of planned development suggest that India has made "impressive progress" in various sectors of the economy despite unfavourable domestic as well as internal milieu. In the Sixth Five Year Plan (1980—85), an exercise in self-introspection about our achievements and failures has been made to evolve strategies, mechanisms and ways to accelerate the tempo of economic growth with social justice. It has been felt by our planners that if India were to march towards the uplift of the hitherto neglected state of our society, it must give top priority to the rural development. A special programme of development of desert areas was undertaken in the late 1970s. In order to dispense with regional disparties, especially in the hilly and tribal areas, special programmes for development were introduced. Minimum Needs Programme (MNP) was also outlined in the manner that it could ensure basic, infrastructural facilities like health, education, water, electricity, transport and communication.

This article attempts to analyse the perspectives of the Sixth Plan so far as desert development programme is concerned. It would also focus on the prevailing wide disparities in the allocation of funds for the desert areas vis-a-vis hilly, North-Eastern Hilly and Western Ghat areas and would suggest at the end the ways and means through which such imbalances can be removed.

Situation alarming

The desert development programme covers the hot arid desert areas comprising 11 districts of Rajasthan (namely Jaiselmer, Barmer, Jodhpur, Bikaner, Chura Nagaur, Jalore, Pali, Ganganagar, Jhunjhunu and Sikar), four district of Haryana (Hissar, Bhiwani, Rohtak and Sirsa) and 3 districts (Banaskantha, Mehsana and Kutch) of Gujarat and cold arid desert areas of Ladakh in Jammu & Kashmir and Spiti subdivision of Lahaul and Spiti in Himachal Pradesh.

The situation in the desert areas of Rajasthan is all the more alarming. Due to erratic rains, several areas do not experience rains even for four to five consecutive years.

In fact, the programme is directed towards controlling "desertification" and mobilising human resources to generate employment and increase productivity in the desert areas. It was at the recommendation of the National Commission on Agriculture, it became a centrally-sponsored programme in 1977-78. After April, 1979 National Development Council recommended that 50 per cent finances would be met by the centre and the matching amount were to be borne by the states under the Sixth Five Year Plan. As regards the outlays for desert development programme, only 50 crores will be released by the centre in the Sixth Five Year Plan. In fact, this is very meagre amount to cope with unprecedented gigantic problems facing the desert areas. Though under the plan emphasis has been laid on arresting desertification through the stabilization of sand dunes, the conservation of water besides the development of pastures plantation of shelter etc. In the cold arid zones of Ladakh and Spiti, irrigated agriculture and improved animal husbandry practices would be among the activities to be encouraged. However, the amount earmarked for such purposes would be too inadequate. Can the meagre amount of rupees 50 crores act as a magic wand to wipe out desertification and pave the way for development, modernization and sound economic growth in such a vast desert areas ? Perhaps the answer is too simple and self-explanatory.

Fair treatment for deserts

But on the other hand, if we cast glance a tthe Sixth Plan outlays for hilly areas in the Himalayan and sub-Himalayan region and Western Ghats and other Hill areas, the provision is for Rs. 560 and Rs. 340 crores for North-Eastern region. It is true that the development of the hilly areas in the country is a categorical imperative for they are very resourceful in terms of minerals, forest and hydel energy. In the states of Maharashtra, Karnataka, Kerala, Assam, U.P., West Bengal and the North-Eastern region, afforestation on large scale is indispensible for ecological balance. But what we wish to point out is that the fair treatment has not been accorded to desert development programmes under the current plan. Reasons are obvious. For instance, sources of water in the desert areas are very scarce. Even where there is little hope for water from the wells, the people of these areas have to draw the drinking water from deep long water belts with strenous efforts. In addition to this, water is unhygenic due to its salinity. It may be mentioned that in the Sixth Plan document, special reference has been made for the "location of safe drinking water". Facilities have also been extended for piped water supply, tubewells and handpumps. Nevertheless, the steps and efforts made in this direction are too insufficient to meet the requirements of the areas for drinking water. Other than the scarcity of water, factors like the recurrence of famine and drought conditions have adversely affected the developments of animal husbandry, have resulted into the erosion of the means of livelihood, for animal husbandry has been a main source of subsistence, health nutrition and self-employment. The crisis has been further deepened due to the disappearance of trees which have been wiped out by the unemployed labour of desert areas to keep their body and soul together. To some extent, therefore, desertification is man-made crisis. But due to financial compulsions, there are no other alternatives suited to these people to earn their livelihood. Thus a grim scenario emerges for the downtrodden people of desert areas. Can there be a better hope for the socio-economic transformation in their life?

Arresting desertification

What steps are needed to arrest desertification? How people can be initiated into making desert development programme effective and useful? Some tangible suggestions may be listed as below.

Firstly, there is a strong need for adopting a balanced approach by the Central Government towards the development of both hilly and desert areas. If no provisions can be made to give preference to desert areas over the hilly and Western Ghat areas, at least parity status should be given to the former.

Secondly, a separate planning for desert development programme, as done in the case of hill areas, be evolved under a separate chapter, so that imbalances may be corrected.

Thirdly, being under-developed, sparsely populated and having vast areas, special treatment should be given to them.

Fourthly, adequate funds be given to the problems like public health, transportation, afforestation, education, communication and to augment the irrigation potential, so that the balanced development may be achieved.

Fifthly, there is categorical need for raising the Central Funds upto 500 crores while keeping in view the vast problems of the desert area in comparison to hilly areas. In order to boost the effective development of these underdeveloped areas, the centre must provide 90 per cent of the amount of Special Central Assistance as a grant and the remaining 10 per cent as loan as in the Hilly areas.

From our foregoing discussion, we may conclude that the socio-economic life-styles of the people of desert areas are inextricably linked with the strategies, imagination and ideas of our economic planners. For once the document is out, the encomium or condemnation is showered on those who are responsible for outlining the perceptions on desert area development.

Under the present circumstances, if development is to be viewed within the totalistic framework, the hitherto neglected desert areas must be assigned top priority.

In such a stupendous task, our economic planners need the re-examination of planning perspectives for the development of desert area with a rational and pragmatic approach. □

Simple compensation procedure for hit and run accident victims

THE SOLATIUM FUND AUTHORITY, set up under the amended Motor Vehicles Act, has made initial allocation of funds to the State Governments to enable the State Authorities to provide immediate financial relief to the victims and or their relatives in the 'hit and run' accident cases. The allocations made in the month of January this year are on ad hoc basis. There is no ceiling limit on the total amount a State Government can seek under this scheme. This being a need-based social welfare measure, additional funds would be made available to the state authorities in accordance with requirements of the particular state for settling the cases falling under this category.

Solatium fund

Death on the road is one of the most dreaded happenings that can occur to a human-being. And after such mishaps the victims or their relatives have been finding it difficult to get quick financial relief. There are a number of accident cases where the driver of the vehicle hits other road user and without bothering about the fate of the victim runs away with the vehicle. The accident sometimes leads to death or grievous injury. Such helpless people are denied any kind of relief. To meet requirements in such cases, a special fund known as the "Solatium Fund" has been established by the Central Government. A sum of Rs. one crore has been set apart for this fund.

The compensation paid out of this fund is a fixed amount. In the case of death, compensation is Rs. 5,000 and in case of grievious hurt, the compensation is Rs. 1,000. This amount is a sort of immediate financial relief to the victim. The receipt of this compensation does not mean that the victim or the dependent of the victims cannot go to the Tribunal for higher compensation, if the vehicle is subsequently traced.

The Central Government has requested the concerned state authorities that such claims should be immediately attended to for paying the compensation expeditiously.

A very simple procedure has been prescribed to apply for compensation under the Solatium Fund Scheme. A legal heir of the deceased or the victim of the injury is required to submit an application claiming compensation in respect of hit and run cases to the Tehsildar or the Sub-Divisional Officer (who is called Claims Inquiry Officer) in the area where that accident has occurred within one month of the occurrence. The form of application can be obtained from the office of the Tehsildar or Sub-Divisional Officer free of cost.

Vast scope exists for India-Canada economic cooperation

Arvind Bhandari

ALTHOUGH Canada and India are both large countries with comparable political systems, economic contacts between them have not been commensurate with the vast potential for cooperation. Recently, however, Canadian development agencies and companies have shown more interest in collaborating with the government sector in India.

The Canadian International Development Agency prepared the feasibility report for the 540 MW hydro-electric Chamera project on the Ravi River in Chamba district of Himachal Pradesh and also provided $ 30 million for preliminary investigations. Canada is now interested in executing the project. Of the project cost of about $ 800 million, the Canadian Export Development Corporation is willing to finance a portion in the form of export credit for the supply of machinery and equipment. But this export credit carries an interest rate that is almost the same as that charged by the IBRD 'window of the World Bank' that is almost 13 per cent. Thus New Delhi is interested in a financial package in which the proportion of CIDA assistance—which like IDA is interest-free—is as high as possible.

Canada is also collaborating in hydel projects in South India. The generating units for the first stage of the Idukki project in Kerala and the Kundah power-house in Tamil Nadu were obtained from Canada. Now, according to a recent agreement, Canada is to give an export credit of $ 59.3 million for the supply of generating units for the second phase of the Idukki project. The Government is also considering utilisation of Canadian assistance for the Lower Periyar Hydel project in Kerala (180 MW) and the Palamaneri hydel project (142 MW) in U P

Oil exploration

Canada has also been associated with India's oil exploration programme. In the wake of the recent visit of a major Canadian business delegation, a Canadian company has signed a $ 12 million contract with ONGC for supply of work-over-rigs. The first three rigs would be manufactured in Canada and shipped to India. The next three would be supplied in kit form and assembled in India by BHEL. Ultimately, technology would be transferred to India for co-manufacture. Again, two Canadian public sector companies, De Havilland and Pratt Whitney, seem to be winning the race with Dornier of West Germany and Cassa of the United States for a contract to collaborate with Hindustan Aeronautics Limited for the manufacture of a light multi-purpose aircraft. The Canadian proposal envisages a long-term credit from the Canadian Export Development Corporation, eventual export of aircraft to other Asian countries and a buy-back arrangement for Pratt Whitney engines. The Canadians argue that the proposed aircraft would not be entirely unknown in India as the Indian Airforce is using planes of the same family, the Carribus

Another Canadian proposal in an advanced stage, of negotiation pertains to introduction of a modern telecommunication and computerised information system in the Indian Railways. The Canadian system of TRACS (traffic reporting and control system) is being considered for the project. A Canadian Government agency, CANAC, would provide consultancy for the project. which also includes, a major training programme for the employees. Further, Canadian companies are bidding for setting up of bulk-handling and containarisation facilities at the Nhava Sheva Port near Bombay Canadian bids have been received for manufacture of 70-ton trucks for open-cast mining at Almora. A major on-going project with Canadian involvement is the Kudremukh iron-ore mine and semi-refining facility, for which Met-chem Canada is providing consultancy services. The company has also submitted proposals for construction of an iron ore pelletisation plant and a shore based integrated iron and steel plant

Private sector's lack of interest

As regards tie-ups with the private sector in this country, the Canadian companies so far have shown only limited interest. The Canadians feel that the Indian policy on foreign investment is rather constrictive. Secondly, Canadian businessmen remain insufficiently informed about the advantages India offers in terms of hugeness of market, cheapness of labour, intermediate technology and developed entrepreneurial skills. The newly-formed Indo-Canadian joint business Council and promotion of contacts under its aegis, should help to bridge the information gap. Of the dozen Indo-Canadian joint ventures in India, the prominent ones are Bata, Indian Aluminium, TAFE, Howe, Walchandnagar Industries, Tata-Dilworth and Holtech Engineers.

Indo-Canadian trade is poor and the balance has consistently been in favour of Canada. In 1982, Indian imports were $ 292 million and exports only $ 91 million, leaving a gap of $ 201 million. India's exports to Canada are less than one per cent of its total exports. Similarly, Canada's exports to India are only 0.47 of its global exports.

Canada has provided India over $ 1.7 billion worth of development assistance in both loans and grants. In the current year the assistance would be $ 52 million. Most of the assistance has been in the fields of agriculture and energy. □

Regularisation vs Deportation

Millions of illegal migrants stubbornly cling to a precarious existence in countries where their presence breeds social tensions which increase as the economic climate worsens. Draconian measures to expel clandestine labourers is one way to defuse the potentially explosive situation, but the price in human suffering would be high. Regularisation of their status would provide a more humane answer to this problem which can no longer be ignored.

If ever proof were needed that the presence of large numbers of illegal migrants can become a short-fused social powder keg, then it was clearly and dramatically provided earlier this year when more than 2 million foreigners were forced to leave Nigeria.

Expelling clandestine labourers when the going gets tough is not a novelty, but with the over-all economic climate worsening everywhere, there are fears that such deportations might increase.

Harsh reality

One can argue that the foreigners themselves are to blame since they should have stayed at home, or that they could have been kept out by clearcut policies, stiffer immigration laws and barriers. None of this, however, will alter the fact that legions of illegal migrants are in place—and growing. It is the harsh reality that must be faced.

"In several African and Latin American countries, as well as in Italy, Malaysia and the United States, undocumented migrants appear to outnumber foreign workers with proper immigration and work papers," according to Roger Bohning, an ILO specialist on international migration.

"The illegal migrats are commonly subjected to exploitation and abuses affecting not only their rights and dignity, but quite often also their physical or mental health," Mr. Bohning says.

"In addition, employment of these people can undermine the working and living conditions or the bargaining power of local workers, especially of the most disadvantaged groups," he adds. "The honest employer who sticks to the rules is undercut. The community where clandestine migrants work is deprived of tax and social security contributions."

All this breeds social and economic tensions which in turn result in mounting political pressures. Therefore, one way of defusing the potentially explosive situation is to regularise the irregular status of the clandestine migrants.

Primary objective

In the last ten years measures to this effect have been adopted by, for instance, Argentina, Australia, Belgium, Canada, France, the Netherlands, the United Kingdom and Venezuela.

"The primary objective of any regularisation can only be to end the human suffering and the undesirable socio-economic functions of the greatest possible number of illegal aliens and members of their families," Mr. Bohning suggests. "One must therefore seek to achieve the maximum response by the foreigners. Otherwise regularisation would fail and might have to be extended right away or repeated in later years."

ILO research on the subject shows that a successful bid to illegal aliens to come out in the open depends on three prerequisities. Firstly, that the criteria for eligibility to regular status are clear and comprehensive; secondly, that the information reaches the foreigners in simple language and trustworthy form; and lastly, that regularisation be finely balanced by deterrence vis-a-vis illegal aliens who might be tempted to stay in hiding and those who might be willing to employ them.

Timing is all-important since the anncuncement of a regularisation can encourage additional clandestine inflows. Consequently, the cut-off point for eligibility must be fixed as prior to the publicising of measures as possible to minimise this danger.

It is also advisable not to tie up regularisation with such fuzzy notions as "stable" or "assured future" employment. The foreigners, afraid that they will not pass muster, might decide to go underground, offering their services at a still lower price.

Moreover, "eligibility rules for regularisation should be based on the principle of equal treatment with regular migrants. If irregulars were favoured one might inflame rather than cure the illness," Mr. Bohning cautions.

Alternative

Most illegal migrants are highly-motivated people, determined to scale any barrier. In fact, the restrictive policies adopted in the recent past by labour-receiving countries are now fuelling illegal migration. And so do population pressures and poverty in the labour-sending countries. This is why clandestine labour risks to be a "growth sector" in the years to come.

Therefore, the question what to do with illegal aliens is here to say, and regularisation measures could provide an answer in some cases and a safety-valve in others.

"The alternative is neglect of the human, social and economic plight caused by clandestine migration," says Mr Bohning, "or massive deportations of people least able to defend themselves." ☐ (ILO)

You and your health

Brain injury - An avoidable tragedy

Traffic accidents in cities are increasing year after year. Traffic accident deaths particularly in Delhi are disturbingly high. The author, in this article, points out that brain injuries are preventable and suggests various measures for preventing the same.

Dr. A.K. Banerji

BRAIN INJURIES are characterised by unconsciousness after an injury to the head. The probability is remote on the part of an individual having a normal span of life without at least a minor head injury. Regarding the population of Delhi, every year approximately 1 in 200 gets a brain injury, 1 in 500 is admitted to a hospital, and 1 in 6000 dies. Traffic accidents account for 70—80 per cent, fall from heights 15—20 per cent and violent fights 5—10 per cent. Of all the brain injuries about 80 per cent are in people below 40 years of age and about 10 per cent of brain injuries are associated with other injuries e.g. face, neck, bones, abdomen, and chest.

Traffic accident deaths in the city are disturbingly high, registering a rise of about 30 per cent in 1982 for a single year. This is indicative of increasing traffic accidents. The major killers are trucks and buses, and the major victims are pedestrians and two-wheel riders. Driving after consumption of alcohol is a significant factor both in case of the truck drivers as well as the victims particularly motorised two wheeler drivers (about 30 per cent of scooter| motor cycle riding victims were admitted with brain injuries to AIIMS during 1982 had consumed alcohol). The helmet using culture for the scooter|motor cycle riders is still remote; the driver using it merely to fulfil a legal requirement and the pillion rider not using it at all. It is tragic that in case of about a third of victims who were scooter|motorcycle riders, the helmet was not strapped to the chin and thereby the victim suffered a brain injury which could have been otherwise prevented.

Roof-tops without side walls are common, particularly in the less affluent areas, and, kite flying on these roofs by children often lead to falls and serious brain injuries. Similarly fall from trees is not uncommon in children in quest of fruits (forbidden). Fall from buses and train tops has not yet become important causes in Delhi though with increasing traffic and electric trains becoming popular this is around the corner, and traffic planning for Delhi should be done now.

First aid vital

First-aid of a patient with brain injury is vital, and could greatly influence the outcome. Obstruction to breathing is what usually kills. The patient should be turned to the side gently, allowing all secretions and vomit to flow out of the mouth and also prevent the tongue from falling back and chocking the person. Bleeding from scalp is best stopped by pressing over a clean handkerchief. It must be stressed that bleeding from the scalp looks ghastly but it rarely kills. No morphia or pethedine should be administered. Transport of the patient is best done in the side position wtih gentle manoeuvres to prevent undue movement which could cause problems with potential bone|joint injuries not recognised at the time of injury.

Brain injury may cause bruises and blood clots or laceration of brain All injuries of brain also cause swelling of brain which is important in producing symptoms by increasing pressure inside the head.

All patients who after injury have become unconscious, sustain a wound on the scalp, or weakness or numbness of limbs or face, or watery (often mixed with blood) discharge from the nose or ear, or a convulsion, require to be admitted to a hospital. In the hospital constant observation with minimal medication is required. All patients who have a scalp wound or blood clots inside the head causing pressure and affecting the brain require to be operated. A fracture of the skull does not require an operation, and incidentally skull fractures take years to heal. Undue worry about skull fracture is needless as the skull is merely the container. What is important is the content i.e. brain. Severely injured patients are monitored by machines and computers which help in regulating the intracranial pressure. Management of respiration is vital as obstructed breathing increases swelling of the brain.

About 5 per cent of patients with injuries of the brain are left with severe residual changes. Minor injuries of the brain often produce temporary giddiness, lack of concentration and headaches, which may last for days or even weeks, but such patients invariably get relief in due course. Memory loss is seen in nearly all brain injuries. Leaving the trivial injury, in all other brain injuries there is loss of memory of events before the injury as also after the injury, even if the patient was apparently conscious. If after a brain injury the respiration stops permanently it means that the patient's brain has died. Such patients if put on respirator may continue to have the heart beating for days and even weeks, though technically the patient is dead. The organs of such patients are used for organ transplantation as the blood circulation persists if the heart is working.

Preventable

Brain injuries are by and large preventable. Death, disability and loss of man-days are severe economic burden to a country such as ours, leaving aside the severe emotional impact on the family. Traffic and transport engineering and management require to be developed as a discipline. The banning of alcohol by all vehicle drivers, compulsory helmets for driver and pillion riders of two wheel motorised vehicles, exemplary punishment for habitual and serious offenders (make them to donate an organ during life for transplant), making municipal bye-laws strict regarding parapets on roof-tops, and making traffic education compulsory in schools are some of the steps. Above all, what is required is the knowledge of the enormity of the problem, and expression of indignation and protest against causative factors by the average citizen who or whose near and dear ones may be tomorrow's victim. □

(Courtesy : All India Institute of Medical Sciences, New Delhi).

Medical Check-up in two minutes

IT takes the "Kompleks-1" unit only two minutes to determine if a person's health is good enough for being a pilot of an air liner, driving an engine or a car, working as an underground traffic controller or hoping for sports records. The new functional diagnosis unit has been developed at the Byelorussian University.

The procedure of testing a person's physical fitness is very simple. A rubber sleeve is put on his left shoulder to measure blood pressure, and small sensors are fixed on his fingers. The unit is switched on and digits appear on the display which are then transformed into words and sentences by a typing device. The pulse and respiration rate, arterial pressure and pupillary reaction, hand effort and the frequency and amplitude of hand tremor and also the temperature of the body provide ample information for concluding if there are disorders in the examined person's organism. **(APN).**

Asthma and Allergy Drugs

A new method which is claimed to substantially improve the technique for administering asthma and allergy drugs via spraying through the mouth has been developed by a Swiss concern. It consists of spraying the drug into a 750 ml. volume pear-shaped plastic tube with a one-way valve from which the patient sucks in the particles. With conventional aerosol spraying methods—only a fraction of the drugs sprayed reach the smallest airways. The Draco tube—called Nebuhaler—allows a longer time before cloud reaction takes place, permitting the production of the small particles and thus reducing impaction.

The tube, which does not require a power supply, is claimed to be more effective, more convenient and considerably cheaper than alternative methods of administering asthma and allergy drugs. The tube will make it easier for asthmatics experiencing severe attacks to treat themselves, since it does not call for the strict coordination between spraying and inhalation which is characteristic of ordinary spraying methods. **(SIP).**

Science & Technology Notes

Machine for laying Foundations

THE Central Building Research Institute (CBRI) Roorkee of CSIR has designed and developed a machine for making bore holes and trenches. The machine, which weighs about 800 kg. and is driven by a 3 horse-power motor, is useful in laying skirted granular pile and bored pile foundations in low bearing capacity and difficult soils.

It can drill upto 5 metres deep holes and trenches of 15-45 cm (6″ to 1.5 ft.) in diameter or width. The machine consists of a rotary drilling shaft mounted on a chassis which can be raised or lowered. The machine, which can work in vertical as well as inclined positions, is mobile and costs about Rs. 20,000.

Fast-Growing Trees for Firewood

ANOTHER CSIR laboratory, the National Botanical Research Institute, Lucknow, has been experimenting with firewood trees which not merely grow quickly but also give a high yield even in unhelpful soil. More than a dozen species selected by the Institute in the first instance have already given satisfactory results. They were planted at Banthra, about 22 km from Lucknow, and have thrived despite the alkaline nature of the soil, turning the 85 hectare field station into a veritable forest. The Institute has also been experimenting with fast-growing shrubs for their firewood yield suitable for combustion.

Microprocessor for Temperature Control

The Central Scientific Instruments Organisation (CSIO), Chandigarh, of CSIR has developed a complete laboratory model of microprocessor-based furnace temperature controller. The instrument can control furnace temperatures within an accuracy of 18 Celsius. It can also be used to control electrical power in water baths, oil baths, refinery pilot plant pipelines with minor alternations.

Corrosion Monitor

An electronic instrument for measuring corrosion rates has been jointly developed by two CSIR laboratories. These are the New Delhi-based extension centre of the Central Electronics Engineering Research Institute of Pilani, and the Madras centre of the Central Electro-chemical Research Institute at Karaikudi. The instrument, which is portable, is useful for monitoring corrosion in cooling towers, fertiliser plants and chemical industries The monitor can be operated with batteries □**(CSIR).**

Funds for S.C. and S.T. Welfare

Southern State Ministers' Plea to the Centre

C.S. Pillai

THE MEETING of the Ministers of the four Southern States and the Union Territory of Pondicherry in charge of Harijan Welfare, has requested the Government of India to earmark funds in the budget of the concerned Ministries directly in proportion to the population of the Scheduled Castes and Scheduled Tribes as is being done by the State Governments.

The two-day conference which concluded in Trivandrum recently was attended by Ministers and Officials of Kerala, Pondicherry, Tamil Nadu, Andhra Pradesh and Karnataka.

Following are the main highlights and recommendations of the Conference:

Co-ordination in the implementation of programmes for Scheduled Castes and Scheduled Tribes deserves most earnest attention of Government to avoid overlapping and duplication, so as to reach the benefits to the Scheduled Castes and Scheduled Tribes in full measures.

Urge for Decentralisation

Vertical compartmentalisation should be put a halt to. An integrated implementation of programmes should be promoted through decentralisation to District and lower levels to create a real impact on the living conditions of Scheduled Castes and Scheduled Tribes.

The funds from various sources should be pooled together and schemes should be prepared on a uniform basis to avoid multiplicity of schemes and implementing agencies catering to the same set of beneficiaries.

Measures for the eradication of untouchability should be stepped up and an alround attempt should be made to bring the Scheduled Castes and Scheduled Tribes to the main stream of life through a well thought out process of socialisation. They should be inducted into modern occupations by giving them various incentives and reserving definite quotas in the issue of permits and licences for various economic ventures.

Educational concessions must be based on actual requirements and cost of educational material, dress and their mess charges on a scientific basis against the ad hoc system prevailing at present.

Steps Against Infiltration

Adequate legislative measures may be taken to prevent infiltration of forward communities into the fold of Scheduled Castes and Scheduled Tribes and penal action should be taken against those who issue and those who manage to secure bogus certificates to appropriate the benefits earmarked for Scheduled Castes and Scheduled Tribes.

Their living conditions should be improved by providing them facilities like housing, drinking water, electricity, communications on a well planned and co-ordinated basis by making optimal use of resources available.

It is felt that the benefit of the schemes intended for the welfare and development of Scheduled Castes and Scheduled Tribes do not reach the target group in the desired manner. This calls for a vigorous quality improvement programme not only for the scheme but also for the personnel involved in implementation.

The Special Component Plan of Kerala based on the district plan and having a decentralised strategy of implementation was appreciated by all participants as a major step in ensuring optimum implementation.

Aid Allocation Basis

The system of adhoc allocation of the special Central assistance should be altered and a rational formula be devised for allocating Central assistance based on the backwardness of Harijans or on the basis of the population and other relevant factors.

The tribals displaced on account of major irrigation and hydro-electric projects should be rehabilitated not as an individual but as a community, as far as possible. The displaced persons should be given alternative land in the command irrigation projects by acquiring and redistributing land from potential beneficiaries and suitable legal measures may be adopted for this purpose.

Rights of Tribals on Forest Produce

The tribals should have full rights on minor forest produce and remunerative price should be fixed for their collection without charging any royalties. The purchase of minor forest produce should be organised through co-operatives eliminating the middle-men. In the areas where co-operative societies become dormant they should be revitalised.

The Tribals should be provided bamboos free of cost so that they can make a living by making bamboo baskets and mats.

A special agricultural programme should be prepared for each agromatic tribal region. Dry farming practices and development of minor millets and other special crops of tribal areas should be taken up on a large scale. Research suppport in agriculture and agro forestry should be provided as a long term programme in various tribal areas.

Selection of right type of personnel with a sense of dedication, sympathy and aptitude for the implementation of programmes under various developmental schemes for the Scheduled Castes and Scheduled Tribes has to be made.

The tribal council and advisory committee for the project areas should be revitalised. ☐

Integrated pest management increases paddy yield

Pests are a perennial problem to the Indian farmer. Here is a unique experiment conducted in the West Godavari district of Andhra Pradesh to contain the menace. The Integrated Pest Management Programme implemented in the district has proved to be a boon to the farmer

R.R. Rao

IN THE WEST GODAVARI DISTRICT of Andhra Pradesh, Integrated Agricultural Development Project (IADP) has been experimenting with various innovations to increase the yield of paddy. During the recent past, pests had posed a big problem. To protect the paddy fields from the onslaught of pests in general and the brown plant hopper in particular, the IADP has undertaken an Integrated Pest Management Programme (IPM) during the last two years. The IPM has proved to be a boon to the farmers.

The programme covered over 1815 hectares of paddy fields in 13 villages, during the kharif 1979-80. The results were encouraging, the IPM had been slowly extended to rabi season and to other villages also. During rabi 1981-82 the programme was implemented in eight villages covering 3101 hectares.

Pest control methods

Depending on the type of pests, various methods had been followed. In the 'varietal control' method, pesticides which resisted pests like BPH, Galmidge, leaf roller were used, particularly in endemic areas. In the second method viz. cultural control, the stubbles were cut very closely and incorporated in the soil while puddling, so that pests might not harbour in the stubbles. Also left-over nurseries were removed from the fields and the bunds cleared. This gave little opportunity for the pests to harbour, breed and spread. After transplantation, for every 10 to 15 days, eight inches wide alleyways were formed. Judicious doses of fertilisers were supplied. The first dose was given in 15-20 days after planting. Growing of community nurseries, which were protected from pests and diseases was encouraged. Light traps were arranged in the fields and the intensity of various pests was watched periodically. Pest surveillance was taken up every 3-4 days, and the pest build up watched.

The third practice to check pests, adopted under the IPM was 'chemical control'. The farmers were advised to use quality seeds treated with the grams of Cerasen or Argoson or Capton for every one kilogramme of seed. The cultivators were further advised to keep the nursery from the pests and diseases by applying five kilogrammes of Thimmet granules for every one acre of nursery, five to ten days after sowing. To protect the field for 30 days after transplanting from leaf folder, stemborer and galmidge attack, the farmers were asked to allow the seedlings soak in a mixture of 200 litres of water, 200 millilitres of Dursban and two kilogrammes of urea for four hours. It was cautioned not to use BHC ten per cent at the growth stage and 15 days before harvest as they destroyed predators which were enemies to fulgorid bug and other pests.

Village-wise performance

The villages covered by the IPM produced more yield than that of the 'control villages' (non-IPM villages). The average yield of IPM is 46.5 q|h of paddy against 40.2 q|h of control villages. The overall increase of yield of IPM villages is 6.3 q|h ranging from 0.7 to 17.1 q|h. Ballipadu village of Peravalli block produced the highest estimated yield of 62.6 q|h under IPM.

Mainly BPT-1235, RP-4-14, IET-1444, Jaya, IR-36, MTU-6024 varieties of paddy were grown in these villages. All these types of paddy under IPM recorded higher yields than those of control blocks. BPT-1235 yielded 47.8 q|h as against 41.1 q|h of the control blocks. The increase of yield ranged from 5.5 q|h to 6.7 q|h. As they were resistant to pests, BPT-1235 and RP-4-14 varieties of paddy were considered to be ideal for rabi season in IPM programme.

About 24 per cent of the field in IPM produced above 50 q|h while only nine per cent of the fields recorded above 50 q|h under control villages, showing the efficacy of the IPM programme. About 96 per cent of fields gave the yield rates of above 36 q|h while only 35 per cent of fields under control blocks gave the same range of yields. This also was a pointer towards the efficacy of IPM programme.

The maximum yield of the variety RP-4-14 under IPM was 69.2 q|h whereas the yield in control block was only 61.3 q|h. Thus the IPM raised the maximum yields also. Though the incidence of different pests like BPH, leaf roller, cut worm, green jassid in both IPM and control blocks the intensity of damage was much less under IPM.

Economics

Let us see the cost of production. Under the IPM, Rs. 1846 was spent towards cost of inputs per hectare whereas in control block it was Rs. 1903. Cost of labour in the IPM per hectare was Rs. 1312 against Rs. 1290 in control blocks. Total cost of cultivation of paddy per hectare was Rs. 3427 in IPM against

(Continued on page 28)

Sprinkler irrigation: A unique programme in Dharwad

V. H. Desai

THE STRESS in the Integrated Rural Development Programme (IRDP), the schemes of which are funded by the Centre on fifty-fifty basis, varies from district to district, depending upon the local conditions. In Dharwad district in North Karnataka, the emphasis is on tapping underground water resources for the benefit of the underprivileged and the backward, while implementing projects under IRDP. The effort in this direction is characterised by sprinkler irrigation schemes to provide water to a stretch of 30-40 acres of land in a cluster of villages in the arid tract of Dharwad District, mostly populated by the SC and ST and other backward classes of people identified by the State to provide assistance. With a view to getting easy and timely matching funds from the banking industry, sprinkler community cooperative irrigation societies have been formed in almost all the seventeen taluks of Dharwad District and by the end of December 1982, over one hundred such societies have been registered.

Advantages

There are certain advantages in the sprinkler irrigation system. More areas can be irrigated under sprinkler system than in flow-irrigation system with the same quantum of water. Water required to irrigate one acre of land under flow-irrigation is sufficient to irrigate three acres of land under Sprinkler system, since water management in the sprinkler system is easily regulated, wastage is avoided and water is put to a maximum use. The quality of the soil remains the same under sprinkler irrigation and it is much to the advantage of farmers. Generally three crops can be grown in a year where sprinkler irrigation is possible. This would naturally lead to higher income with comparatively less expenses.

Tapping underground sources

A patch of fields of about 30-40 acres adjoined together where possibility of underground water is indicated by the geologists, is selected to dig three borewells at a distance of six hundred feet from one another. The sprinkler community irrigation societies select such patches of land mass, which is generally dominated by small and marginal farmers, and SC and ST people. Three borewells, three pumpsets and sprinkler equipments are the important constituents of this scheme. Although such societies have been formed practically in all talukas of the district, there is a concentration of sprinkler societies in Ranibennur, Haveri and Ron talukas. Till January 1983, the Dharwad District Rural Development Society (DRDS), which controls and supervises all the schemes under IRDP has provided over one crore of rupees to these sprinkler societies and a matching assistance was forthcoming from the cooperative and nationalised banks operating in these areas. The beneficiaries of the sprinkler societies are mostly the SC and ST, the backward and marginal farmers.

As against the target of 10,200 (at the rate of 600 families per taluka, and there are 17 talukas in Dharwad District), as many as 9,500 individuals have been identified and assisted by the Dharwad DRDS upto the end of January, 1983. Under IRDP, nearly Rs. 2.5 crores have been spent, 50 per cent of which has been given as subsidy, till January, 1983.

Subsidies and loans

The total outlay of the Dharwad DRDS for 1982-83 is of the order of about Rs. 4 crores, comprising subsidies and loan portions. Fifty per cent of this outlay is earmarked for animal husbandry, dairy, poultry and goats and sheep development—an area immensely liked by those identified by the DRDS. Under this programme, an individual beneficiary is the proud owner of milching cow or buffalo providing easy economic benefit.

The Dharwad DRDS has set apart 15 per cent of the outlay for minor irrigation, mostly for sprinkler societies and an equal percentage will be spent on sericulture in the District. The remaining 20 per cent of the outlay for 1982-83 is meant for tertiary sector.

The Dharwad DRDS which has launched during the current year a massive animal husbandry programmes and sprinkler irrigation schemes, the latter perhaps unique in the whole country, seems to be poised for a big leap forward in the State, and its sprinkler irrigation societies seem to be capable of setting a new trend in the country to tap underground water resources in the cooperative sector of the backward rural areas. □

(Continued from page 27)

Rs. 3432. Average yield in IPM was 46.5 q|h. against 40.2 q|h. Total value of the produce per hectare was Rs. 8440 in IPM and Rs. 7296 in control block. Net income came to Rs. 5013 in IPM against Rs. 3864. From this statistics it is evident that the cost per acre in IPM is more or less the same as in control blocks. But IPM yielded more income than that of control blocks. The cost benefit ratio is 2.46 under IPM while it is 2.12 under control blocks.

Thus the Integrated Pest Management Programme on paddy crop launched during rabi 1981-82 in West Godavari district of AP utilised all known pest control measures judiciously to check the pest population below the economic level though the pest problem could not be eradicated.

Development of fisheries in Maharashtra

THE OBJECTIVES of the development of fisheries in Maharashtra have been to augment fish production and to achieve socio-economic uplift of the fishermen.

The harvestable potential of marine fisheries upto 100 fathom depth has been estimated at 4.60 lakh tons per year. The State Government has so far granted financial assistance for construction of 3,228 mechanised boats. Since 1977-78, 80 per cent finance was provided by the National Cooperative Development Corporation and 20 per cent by the State. During 1982, an expenditure of Rs. 137.54 lakhs was sanctioned for granting assistance to 107 groups of fishermen, out of which NCDC's share is Rs. 91.11 lakhs. Besides, 25 per cent subsidy is also granted to the individuals and groups of fishermen who build up mechanised boats by raising institutional finance. An expenditure of Rs. 27.45 lakhs was incurred for granting to 70 operators.

The Maharashtra Fisheries Development Corporation Ltd., provided a sum of Rs. 3.22 lakhs for fisheries development projects during 1982.

The State Government also enacted the Maharashtra Marine Fishing Regulation Act 1981, enforced from 4 August, 1982, to provide for delimitation of the fishing zones for different types of fishing.

At present 22 fish seed farms are functioning in the State and 12 are under construction including seven under tribal Sub-Plan and one under Drought Prone Development Programme. The scheme to establish fish seed farms was first initiated in 1966-67.

Spawn production

The spawn production, which was 5.45 crores at the end of Fourth Plan, is raised to 15.95 crores at the end of 1982 and production of 20 crores spawn is targeted by the end of 1983. Under the scheme of fish farming in impounded waters, inland fish production has reached 26,000 M T. which was 12,000 M.T. at the end of First Plan. These programmes are also undertaken under the Tribal Sub-Plan, Drought Prone Development Programme and Integrated Rural Development Programme.

As for the work of survey of brackish-water areas in the five marine districts of the State initiated since 1979-80, preliminary survey of 70 creeks has been completed. So far about 14,455 hectares were found suitable for construction of brackish-water fish farms to encourage the pisciculturists to take up prawn culture in the areas assessed suitable during the survey. A pilot project for establishment of brackish-water fish farm at Ratnagiri with the financial assistance from the Central Government was initiated during 1979-80 at a total cost of Rs. 31.35 lakhs. So far Rs. 22.35 lakhs were spent. A provision of Rs. 10 lakhs existed during 1982-83 and during 1982 an expenditure of Rs. 6.54 lakhs was incurred. This farm will act as the educational farm for pisciculturists for prawn culture.

Two Fish Farmers Development Agencies—one each in Bhandara district and Chandrapur district—were set up in 1978-79 to provide all required inputs in the development of modern fisheries in a compact area. Another agency was set up in Nagpur district under tribal area in 1982.

Training

The State Government has been providing training to fishermen or efficient handling of mechanised boats and fish exploitation at four training centres established in marine districts and at the fish seed farms. Two new training centres—one at Sindhudurg and another at Thane district—were set up in 1982. Besides, the fishermen are trained in Master Fisherman's course, engine drivers course at the Central Institute of Fisheries Technology, Cochin and in Inland Fish Culture, Hyderabad. Added to this, in-service training to technical staff of the Fisheries department is also imparted at Bombay and at the Extension Training Centre, Hyderabad.

Under the Plan for preservation, transport and marketing 15 ice factories have been established in cooperative sector and three are under construction. Financial assistance to the co-operative societies for purchase of 62 trucks was also granted. Three fish markets were constructed by the Gram Panchayats with financial assistance from the State.

During 1982, subsidy was raised to 15 paise per litre limited to monetary ceiling of Rs. 1,000 per year per boat. An amount of Rs. 11.25 lakhs was spent over purchase of 11.399 kg. nylon and 3.356 kilolitres of HSD oil on fishery requisites.

Improving fishery harbours

Improvement of fishery harbours has also been effected. In this connection, construction of full-fledged fishing harbour at Mirkarwada in Ratnagiri district at a total cost of Rs. 344.25 lakhs commenced during 1978-79. Besides the expansion work of jetty at Karanja in Raigad district, landing and berthing facilities for fishing at Rajpuri are under way. In addition, provision of infrastructure activities such as approach roads, water supply, fish-curing yards, community halls etc. in coastal villages Dhakti Dhanu, district Thane, Harnai Paj in Ratnagiri district and Raipuri in Raigad district at a total cost of Rs. 10.38 lakhs, Rs. 12.54 lakhs and Rs. 9.37 lakhs respectively, is in progress.

A sum of Rs. 2.50 lakhs has been provided under Special Component Plan for the development of Scheduled Castes in fisheries.

Other expenditure on fisheries comes under non-Plan Schemes relating to direction, administration, research, education, training, inland fisheries, processing, preservation, marketing, etc. A total of Rs. 114.62 lakhs was incurred under non-plan schemes in 1982 as against a total of Rs. 113 lakhs spent during 1981-82.□

Loktak Hydro-electric Project

L. Shyamjai Singh

THE FIRST GENERATING UNIT of Loktak Hydro-electric project took full swing of operation on 5th May, 1983 thereby symbolising a great feat of National Hydro-electric Power Corporation, in a location associated with legendary episodes of Moirang, 39 km. south of Imphal, capital city of Manipur.

The project can claim many firsts in India. It is most stupendous project so far executed in this country. For the first time in India, a tunnel with a length of 6.69 km. was constructed successfully in highly unstable and adverse geological condition; hydro power tunnel had to be executed in gassy condition because of Methane gas; and Alpine Miner under New Austrian Tunnelling Method Technology was deployed in the boring of tunnel at Loktak.

Sixteen years ago the idea of construction of this project was fancied. It was in 1967, when the Public Works Department, Government of Manipur prepared a comprehensive project for generation of 70.000 KW of firm power in the Leimatak Valley using the water of Loktak Lake, providing the lift irrigation to 23.000 hectare and reducing flood levels of the lake.

The first major project

The project, a multipurpose one, and the first major hydro-electric scheme in Manipur State envisaged the diversion of 58.8 cusecs of water from Loktak Lake, having a storage capacity of 410 million cusecs. Annual consumption of water for power generation will be utilised for irrigation. Annual output of power generation is estimated to be 48 million units. Total gross investment for the entire project is estimated to be around Rs. 113 crores for generating 105 MW. In the year 1971, the Ministry of Irrigation and Power took up the construction work. Later on, with the formation of National Hydro-electric Power Corporation, the project came under the direct supervision of NHPC with effect from 1st January 1977.

This project is multi-dimensional. A barrage, 10.7 metres high, across the Manipur river at Ithai helps in water storage in Loktak Lake. The water is brought through a trans-basin water conductor system 10.29 km. long comprising 2.328 km. of open channel, 1.077 km. of cut & cover section, 6,615 km. of head race tunnel and 0.175 km. pipe tunnel. Just at the joining point of pipe tunnel and head race tunnel stands a surge 60 metre high and 9.15 metre in diameter to regulate the flow of excess water. Three sets of Penstock Pipes with an average length of 1346 metre and 2.286 metre in diameter bring down the water from the Pipe Tunnel to the generating station. The generating station (60 m × 5.5 m) having 3 units of 35 MW each is located on the bank of Leimatak River. A tail race channel between the power house and Leimatak river serves as an outlet to force out water.

Two Nos. 132 KV Transmission Leimatak Line each 35 km. long from Leimatak to Imphal and to Yurembam (Imphal area) and one 132 KV transmission line, 120 km. long from Leimatak to Jiribam are provided for power from the generating station. The most painstaking task was the construction of 6.89 km. long tunnel which passes through weak geological terrain.

Dream comes through

The 18th April, 1983, was really a day of rejoicing. On this day the water of Loktak flowed through the tunnel and merged with the water of Leimatak river, thereby realising the ambitious dream of generation of power in the Leimatak Valley.

Apart from the departmental activities many organisations like CEA, CWC, BHEL, NPCC, HP, Patel Engineering Ltd. Company, Western India Erector Ltd., etc. were directly or indirectly contributing to the execution of such a bold project. The construction of this project was really a herculian task. Many complex engineering problems were involved. Against all these odds, the Indian engineers with limited technical facilities tackled unforeseen situations.

The project being located in a far off difficult geographical zone of the country transport problem is a big impediment all along the construction work. Other geotechnical problems like unstable slope in the Penstock area, presence of highly inflamable Methane gas, flowing ground condition etc. hamper the progress of work very often. Due to squeezing pressure almost whole tunnels within face 4 & 5 had to be rectified repeatedly.

In the coming year Loktak project, with its installed capacity of 105 MW and its generating capacity of 70,000 KW of firm power at 60 per cent load factor, will play an important role in shaping the present socio-economic set-up of Manipur in particular and the entire North East Region in general. It will bring about a sea change in the history of industrial revolution in this area The power generated by this project will be fed to Manipur and neighbouring States of Assam, Nagaland, Mizoram, Tripura etc The irrigation facility created by this project will bring under cultivation 23 000 hectares in Manipur Valley. This will help the farmer to adopt double cropping as well as multicropping system. It speaks well for the future prospect of agriculture in the state.

Also greater employment opportunities will be provided to the people of Manipur. Almost all components of the projects are now completed. People of Manipur thank the Engineers, Administrative staff, technicians, workers and other non-government bodies, individuals, who have toiled relentlessly with a sense of dedication and courage round the clock to materialise this colossal undertaking. LOKTAK HYDRO-ELECTRIC PROJECT is no more a dream but a reality. ☐

A Tale of Three Camels

B.K. Hegde

FROM THE MANDI TOWN of Bhalki in Bidar district of Karnataka to Madakatti village, it is an eight kilometre walk through a solitary mud road. As you trek through, you will bump into three camels, loaded fully with merchandise, coming your way. Now watch for the three men who walk barefoot along with the camels. They are Pashumiya, Faizusab and Ghaleppa, all belonging to Madakatti. For a number of years, they have been walking like this along with the animals, and they were paid for that. The three men were wage earners and their job was to carry jowar and bajra to the market town on camelback and bring grocery and other consumer items from Bhalki to their village. Back at their village after a tiresome trip to Bhalki, they would unload the merchandise at the doorsteps of their landlords, untie the camels and take the animals for watering and grazing. This was a routine for Pashumiya, Faizusab and Ghaleppa. The camels they drove were owned by the landlords. The three men got paltry sums as wages for their work—and what a work it was—walking under the scorching sun. It was a miserable life for them, for it seemed as if they were destined to a life of poverty for ever.

Own a camel, please

Not for long. A day came when Madakatti village was adopted by the State Bank of India for all round development and each household in the village was identified for this purpose. When it came to Pashumiya, Faizusab and Ghaleppa, an almost incredible proposition from the Bank confronted them. Would they like to own the camels ?

Own what ? The camels. Their hearts started throbbing faster and faster. They would not believe it. How could it ever happen ?

The State Bank of India offered them loan assistance to buy the camels. It worked like a miracle. The three men saw a new way of life opening before them. They are no more coolies; they are masters of their own business and masters of their animals.

You can still see Pashumiya, Faizusab and Ghaleppa walking through the bumpy mud road leading from Madakatti to Bhalki alongside their camel, heavily loaded with merchandise. You can also see beaming self-confidence showing up in their brows. And certainly you can make out that they have crossed the rubicon; they have crossed the poverty line.☐

Committee to review development banking System

WITH the experience of three decades of development banking and the tasks ahead to meet the basic objectives of industrial development of the country, the Industrial Development Bank of India (IDBI) has appointed a six member Committee to review the Development Banking System under the Chairmanship of Shri V. G. Rajadhyaksha, former Member, Planning Commission.

The terms of the Committee are as follows :

1. To review and evaluate the system of development financing institutions and its performance, keeping in view the basic objectives of industrial development policy as enunciated by Government from time to time.
2. In the above context, to avaluate the different schemes of financial assistance of IDBI in terms of their developmental impact.
3. To examine the existing arrangements for IDBI to co-ordinate the activities of development financing institutions and to pool and share their expertise and experience.
4. To evaluate the effectiveness of specific policies, instruments or devices used by the development financing institutions from time to time, such as those relating to convertibility, holding and disposal of equity investment and appointment of nominee directors, in achieving the desired objectives.
5. To evaluate the results of promotional activities of IDBI and other development financing institutions.
6. In the light of the above, to make such recommendations as the Committee may consider relevant for improving the performance and effectiveness of the development banking system.

The Committee is expected to submit its report to IDBI by June 1984.

Youth can do it

THE ELDERS of Peria Kozhuvari Harijan Colony (Vanur Taluk, Tamilnadu) used to look at the members of Youth Club with suspicion even though the youth club was affiliated to Nehru Yuvak Kendra. Then came the drought. The members of the Youths Club, with the active support of all the able-bodied villagers, completed the desilting operation of the village well, thus assuring the village drinking water. The constructive action of the youths had changed the opinion of the village elders. The elders of Peria Kozhuvari Harijan Colony now look at the youth club members with appreciation.

V. Govindaswamy, FPO,
Pondicherry.

Readers' Forum

Sir,

In recent days Yojana has not only improved in its form but in the contents as well. A symposium-like discussion is taken up on any burning issue of the day and the participation is wide enough to cover varying opinion of the participants.

Yours etc,
Bhaskar Parichha, Paradip Port
Dt. Cuttack (Orissa)

Sir,

I have gone through the article on "Fuelwood in the Indian Economy" by Dr. V. R. Desai (July 1—15). The article is, indeed, very informative, even for a general reader. However there is one reference which was not quite clear to me. In table No. 1, Column 8, there is a reference to "percentage share of source of supply of each form". In this column it is mentioned that 3 per cent of electricity was "collected" in Urban Areas.

I shall be grateful if this concept of ‘collection of electricity is clarified by the author.

Yours etc,
Champa Aphale, S. R. O. (SD),

Sir,

I have gone through the article "Child Development still not integrated" by Smt. Uma Joshi. (May 16—31). I would like to make some observations in this respect. The article is based on the summary given in the PEO "Report on State of preparedness of the Integrated Child Development Services Project" brought out in 1979. There is, however, one glaring mistake in para 2 of the article wherein it is stated that "the ICDS scheme was initiated by the Planning Commission as early as 1972 in some selected rural| tribal blocks and urban slums". This is not correct. Thirty-three experimental ICDS Projects were set up on 2nd October, 1975 and not in 1972.

The article gives the observations of the PEO when the base line survey was conducted by it in 1976-77. The summary of these findings of the PEO study had already appeared in one of the earlier issues of Yojana. After that, the PEO has brought out another report giving comparative picture of the working of ICDS projects at the base line and repeat round surveys conducted by the PEO, which high-lights the improvements in the working of these projects as the repeat round.

It would be appropriate if an article giving more recent findings of the working of these projects is published in the issue of Yojana.

Yours etc,

Champa Aphale, S. R. O. (SD)
PEO, Planning Commission.

Sir,

I appreciate 'Yojana' as the best magazine for its publication of the current socio-economic affairs. I want to be one of your regular subscribers.

Yours etc.
Sd|-
D. P. Kar,
C|O A. B. Kar,
Sadashib pur
Dhekanal Dist. (Orissa).

Dear Sir,

The fortnightly feature "You and Your Health" is a most welcoming topic. The two write-ups "Blood Pressure and Salt" by Dr. Sharma and "Physical fitness: What it means" by Dr. Manchanda, are indeed very informative and interesting.

May I congratulate you and the authors for publishing such informative write-ups.

I hope YOJANA readers will greatly appreciate your efforts in this aspect.

Very truly yours,
Sd|-
(H. K. Lakshman Rao)
Manager, Marketing Service
Madras Fertilizers Ltd.
Manali, Madras.

(Continued from page 8)

deal of qualitative analysis and uses judgement to establish links. In totality, it tries to suggest logical steps necessary to improve performance.

In sum, evaluation is more than a progress analysis and review or inspection, checking and scrutiny of schemes and works. It is a purposeful problem and result-oriented study of programmes under implementation or implemented. It is an objective and fair in assessment so that the evaluation report is accepted by all concerned for serious consideration and appropriate follows up action. End of the project evaluation is usually done by external agency to ensure independance of approach for a comprehensive integrated study. Projects under agriculture, land reforms, irrigation, local works, education credit, health, family planning etc. and pertaining to institutions like panchayats, cooperatives etc. are studies on this basis.

The usual research methodological approach is adopted for conducting evaluation. Thus, it starts with identification of the problem|project, establishing criteria for assessment, methods of collection of data, design of the study, and the mode and manner of conducting actual field studies. The adequacy of sampling of respondents (boh beneficiary and non-beneficiary) and a reasonable scope for time and space comparisons are other essentials to be satisfied by an evaluation study. The evaluation endeavours to measure impact from economic and social angles with particular reference to its content and organisational performance.

Project monitoring and evaluation are thus important aspects of project|programme planning and management. □

Success stories

Crossing the poverty line

MOIDEEN KOYA is from Thiruvangoor, a small village in Calicut District. To maintain his family of six members, he started vending tea dust. He moved on his bicycle selling packets of tea dust. Then he thought of starting a shop of his own to increase his earning and came into contact with the local development Block Officer. He was enlisted for assistance under Integrated Rural Development Programme, being head of a family living below poverty line.

"Apart from selling tea what do you know to start a business of your own ?" The village Extension Officer asked him. Moideen Koya spoke of his days at Perumbavoor where he worked as an assistant in a bakery. He knew how to make bread, cake and biscuits. "Will I be given assistance to buy the utensils ?" He asked. Yes, he was eligible. He could get working capital loan also if a workable scheme was evolved.

The local Gramin Bank granted him a loan. The subsidy allowed under Integrated Rural Development Programme helped him in developing his shop attached to his house. Now banana chips as well as some salty mixture are made there with the help of his wife and children. It is not a business confined to his family alone. Two boys are also given employment as there is good demand for his products. Halva made by him is being sold in Calicut city. He is taking up catering also.

For enterprising persons there are suitable schemes under Integrated Development Programme. Moideen Koya's next plan is to shift the oven from his house for the sake of safety.

Moideen Koya has applied for a second loan for which he is eligible under the scheme. Shall it push him above poverty line ? The Officer in charge of the Block is quite hopeful.

E. Vasu

Another farmer crosses poverty line

ISHWARBHAI APABHAI CHOWDHARY, resident of Dungara village in Kamrej taluka of Surat district in the Gujarat State used to cultivate jowar and earn about Rs. 1200. He has 1.20 hectares of land, of which only 0.40 hectare holding was worth cultivating. He switched over to rice from jowar. He took advantage of irrigation facilities. He spent Rs. 125 towards irrigation cess, Rs. 400 towards inputs and Rs. 250 towards levelling of land. Members of the family gave 125 man-days of labour.

As Ishwarbhai adopted improved method of cultivation, a loan of Rs. 1200 was granted by a nationalised bank and Rs. 600 were granted by the Goverment as financial assistance under the 20-point programme.

The rice crop was bumper. He used rice for domestic purposes which saved him Rs. 300. He sold remaining rice and earned Rs. 2200. Rs. 150 came through sale of wastage of rice.

Thus, net income of Shri Ishwarbhai came to Rs. 1875 after deducting Rs. 775 towards incidental expenses. Ishwarbhai is all praise for the facilities offered under New Economic Programme.

Harshvadan Shah

Neyveli comes to rescue

NEYVELI LIGNITE CORPORATION, which has made a mark in power generation, has performed a different role recently. It has met the urgent needs of providing drinking water to the surrounding villages of Neyveli in South Arcot district. The Corporation sunk bore wells in the villages—Kadampuliyar, Vadalur, Keezhur and Per Periampattu.

These villages in turn help their adjoining villages also in solving their drinking water problem. These apart, Gangaikondan lake, which has the benefit of getting water let-out from Neyveli Mines, is also used for irrigation.

V. Govindaswamy, FPO
(Pondicherry)

Banana boom

THE Shikarpur Anchal in West Bengal used to be very backward. Now it boasts of a bank and many cooperative societies. It has a thriving market and the village children not only attend local schools but aspire for higher studies. The reason for the villagers' prosperity is an unprecendented banana boom.

It all began in the late seventies when a school teacher named Shri Gour Chandra Debnath started banana cultivation on a small plot of land taken on lease. Being an educated person, he contacted the Banana Research Centre at Chinsura and the Centre helped him with expert advice and high yielding variety of suckers. The crop was good.

Some small and marginal farmers also followed his example. The farmers have decided to market the produce collectively at the Calcutta wholesale market. They are having good returns. A farmer of this area also bagged the first prize in All-India Banana and Fruit Show at Cuttack.

FPO, Ranaghat (W. Bengal)

BOOKS

Industrial Relations

DYNAMICS OF INDUSTRIAL RELATIONS IN INDIA By C. B. Mamoria. Published by Himalaya Publishing House, Ramdoot, Dr. Bhalerao Marg, Girgaon, Bombay 400004. First published: 1983. Pages 760. Price Rs. 125.00

THE six parts of the book have as many as 30 chapters, ending up with a discussion on Industrial Relations Bill of 1978. It is a laborious exercise executed by the author with uncommon dexterity, perseverence and insight. The book is intended to be a compendium on all that concern with industrial labour in the Indian context. The existing labour laws have been elaborated upon for ease of understanding.

Beginning with a discussion on the growth of industrial labour force in India, it is observed that despite certain marginal decline over the last six decades, more than 70 per cent of the working population in India is engaged in agriculture and allied occupations though the proportion of labour force engaged in secondary sector has shown upward trend since 1950 and yet it has been lower than that of 1901. Tertiary occupations are taken up by more than 16 per cent of the working force. The secondary and the tertiary sectors as such have not been expanding so rapidly as to absorb the surplus labour on land, which implies that these sectors have not grown rapidly enough to make a dent on the primary sector.

Among the important chapters in the book are on trade unions, industrial relations, industrial disputes, settlement machinery, wage legislation and workers' participation in management. The author rightly points out that with new developments in the industrial field, the relationship between management and workers has changed from one of masters and servants to that of joint responsibility as equal partners in industry. The whole area of industrial relations has shifted from adjudication to persuasion, more pressure and voluntary arbitration for the settlement of industrial disputes. But then, the inexplicable phenomenon of labour strikes|lock-outs taking place in the country for very long periods seems to be intriguing if a social milieu of 'partners in progress' has really been established in our industrial units.

Navin Chandra Joshi

Jatinder Mohan Sengupta

Deshapriya J. Sengupta by Sachin Dutt, published by National Book Trust, New Delhi, 1983. Pages 165. Price Rs. 9.50 p.

INDIA has given birth to many great men from time immemorial to save her pride and respect. J. M. Sengupta was one of them. But it is to be pointed out that he is one of the many honoured names almost forgotten by the present generation. Sachin Dutt attempts in the book, under review, to reconstruct the fast vanishing values and fading memories of at least one of those great men.

Born in the year of the foundation of the Indian National Congress, Sengupta became one of the foremost leaders of the Congress of his time on account of his ability and sacrifice. The formative years of his life (1885 to 1910) witnessed the rapid progress of Indian nationalism. From his very birth, he breathed an atmoshphere of passionate protest against the subjection of India to British imperialism.

Jatindra Mohan's many-sided contributions to the promotion of national consciousness were gratefully acknowledged by the people of Bengal who lovingly called him 'Deshapriya' (Beloved of the Country).

The book is very handy. It should reach every Library. It is very very reasonably priced.

S. K. Dhawan

Development Banking in India

IDBI has brought out the third issue of its annual "Report on Development Banking in India 1981-82 (April-March)". A special feature of this publication is that it presents at one place data on the operations of all the major all India and State level financial institutions. As the accounting years of the different institutions are no common, the Report on Development Banking serves as a ready source of information on the operations of the various institutions for a comparable period (April-March). The Report contains a comprehensive Statistical Appendix presenting time-series data on different aspects of operations of the institutions.

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Solving Drinking Water Problem

NINE STATES had achieved over ten per cent of their annual target of providing drinking water to their villages by the end of May 1983. Rajasthan had provided the facility to 1000 villages, which is over 31 per cent of its target of covering 3200 villages in the current financial year. Andhra Pradesh (29.8%) and Maharashtra (25.9%) were other States with excellent performance. Sikkim, Himachal Pradesh and Manipur's achievement varied between 6.2 and 7.9 per cent while nine States and Union Territories fared badly. There was no progress in Jammu and Kashmir, Meghalaya and West Bengal, according to the report compiled by the Planning Commission on the implementation of 20-Point Programme.

Achievement at the national level was 11.8 per cent with 5,780 villages covered against the annual target of 48,889 villages. In the case of assistance to Scheduled Tribe families the overall performance was just 2.8 per cent. Only 29,000 Scheduled Tribe families had got assistance in the period under review. Kerala and Himachal Pradesh were the only two States with over 10 per cent achievement, which is the minimum required to earn 'very good' comment from the Commission.□

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Distributing Surplus Land To SC And ST Families

AS A RESULT of implementing the land ceiling laws, 43.4 lakh acres of land have been declared surplus. Out of this actual possession has been taken of 29.5 lakh acres and out of this 20.5 lakh acres have been distributed to the eligible families. These eligible families include 6.15 lakh members of Scheduled Castes and 1.88 lakh members of Scheduled Tribes. Out of the 20.5 lakh acres of land distributed 7.42 lakh acres have been given to the Scheduled Castes and 2.92 lakh acres to the Scheduled Tribe members. Thus, more than 50 per cent of the land has been distributed to members of these communities. The total number of beneficiaries belonging to Scheduled Castes and Scheduled Tribes also exceed half of the total number of nearly 15 lakh beneficiaries.

The national guidelines on agricultural land ceiling issued by the Government of India in 1972 on the basis of the recommendations of the Chief Ministers' Conference called upon the States to accord priority to landless agricultural workers, particularly those belonging to the Scheduled Castes and the Scheduled Tribes, in the distribution of surplus land. The laws on land ceiling enacted by the States and Union Territories accord high priority to landless agricultural workers, particularly those who belong to the Scheduled Castes and Scheduled Tribes in the programme for the distrubtion of surplus land. In addition to these, a certain extent of waste land and other public land has also been distributed by several States to these categories.☐

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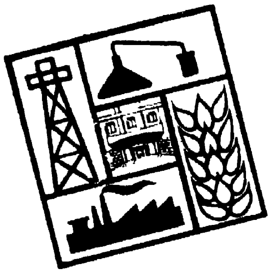

MID-TERM APPRAISAL

VOL. 27 □ NO. 18

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OCTOBER 1—15, 1983 □RUPEE ONE

IRDP and its strengths

NEXT ISSUE

Relevance of Gandhi in economic planning

Bootleggers turn poultry producers

WITH 69 PEOPLE selling 20,000 eggs a day, birds are big business in Bedi Falia, a hamlet of 300 tribal families.

But earlier, bootlegging was their big biz. All the 300 families of the small hamlet belong to the weaker sections of society and moonshining was only thing they knew and did, to earn their livelihood. Mistrust and misery composed the spirit of the village. The little village was a standing witness to the frolic of desolation. It seemed that they were all beyond hope, all beyond redemption.

Three years go, Lallubhai, a vendor of illicit liquor was returning from his bootlegging rounds. It was a bad day and his sales were low. He consumed most of what was left and fell into a gutter, unconscious.

Shri Manchubhai Chowdhari, a social worker, happened to pass by. But for him, Lallubhai would have been drowned by Baachus in the gutter.

Manchubhai was horrified. He wanted to do something for the moonshine village. The Bank of Baroda, the lead bank of Gujarat, agreed to help him.

Chowdhari Saheb managed to organise the people into a Milk Producers' Co-operative Society. It began with 62 members. Each member got 2 she-buffaloes with calves. The bank advanced the costs. The nearby Sumul Dairy arranged to collect the milk from the village. As regular incomes reduced the uncertainties of life, more and more members joined the Society. Within two years its ranks swelled to 189.

Bedi Falia had 12 "Aud" families living in it. They are considered to be the poorest of the poor in India. The bank gave them loans to purchase donkeys to be used as pack-animals to carry bricks and cement to construction sites. Some 46 land-less villages were given finance to buy nylon fishing nets to catch fish in the nearby rivulets and water bodies. Another 13 people were helped to open small shops.

Poultry Production

Success awaited Bedi Falians beyond their wildest dreams in the development of poultry. Today with the bank's help 69 people own 34,500 birds, producing 20,000 eggs a day. The bank advanced Rs. 28 lakhs for this purpose.

The so called weaker sections may be weak financially, but their honesty is unassialable. Of all the 229 persons who received loans from the banks, not a single one defaulted on repayment. Being fully satisfied with the performance of the villagers, the bank is willing to shell out more money for their upliftment.

Under the 20-Point Programme a gobar gas plant, housing for the village, drinking water, a primary school and a health centre are slowly coming up.

Bedi Falia is different now. As sun began to shine on its once miserable life, moonshine bid a hasty retreat. Nobody drinks in Bedi Falia today.□

YOJANA

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The Sixth Plan : Mid-Term appraisal

R. Srinivasan

The Planning Commission's mid-term appraisal of the sixth five year plan presented to Parliament by the Planning Minister, Mr. Shankar Rao Chavan, is a modest attempt at admitting the weak points in the plan execution in the first three years and drawing up the strategy to overcome them in the remaining period of the plan.

Normally the exercise should have been completed last year. But as Mr. Chavan himself admits in his preface to the voluminous but useful document, the delay was mainly due to the adverse weather conditions in the previous years and the need for a more careful assessment of its impact on savings, resources and investments.

All the same, the delayed exercise has proved useful as it not only spells out the structural adjustments necessary in the last year of the plan to achieve the objectives fully, but also ensures that a basis for the seventh plan is firmly established.

Highlight

A highlight of the appraisal is the detailed work done relating to resources and balance of payments projections and the critical review of the performance of some of the core sector areas.

Considering the backdrop of the economic scenario, both domestic and international, against which the sixth plan was launched at the turn of the current decade, the Planning Commission's assessment that the five year targets, in terms of physical achievements, will be fulfilled in full or in adequate measure in a number of areas should be welcome.

There is, however, a candid admission that special efforts will be called for to improve performance in some areas, notably the infrastructure sectors. The appraisal rightly stresses that irrigation, agriculture, power, coal, railways and some other segments of industry should be protected against shortfalls. Significantly the review does not hesitate to advocate temporary shift of priorities in sectoral allocations if this will help in maintaining the tempo already created.

Four-point recipe

The Planning Commission has a four-point recipe for achieving the plan targets. They are : (1) further strengthening of the trade policy framework to attain a more rapid development of exports; (2) continued prudent management of the economy to ensure relative price stability; (3) measures to contain pressures on balance of payments; and (4) avoidance of infrastructure bottle-necks or shortages of basic intermediates.

According to the document, over the first three years of the plan, the public sector investment has exceeded the plan targets. Along with this, the real Gross National Product growth per annum over the three years is also equal to the plan target of 5.2 per cent. But keeping in view the fact that there has been an erosion in the nominal investment by cost escalation the plan objective of a significant step-up in the rate of growth of investment has to be pursued with greater determination.

For 1983-84, it has been decided now to raise the Centre's annual plan investment by 800 crore rupees directed mostly towards the core sectors. The public sector investment in real terms would, however, have been higher but for the adverse factors including the second oil price hike.

Despite serious set-back on the farm front as a result of droughts, floods and other natural calamities, foodgrains production is expected to be in the range of 146-148 million tonnes at the end of the plan period as against the target of 149—154 million tonnes. However, commercial crop sectors like sugarcane, cotton, tea and coffee, jute and mesta and the five oilseeds will generally be equal to the targets while sugar and vanaspati production will far exceed the targets.

In the field of manufactured goods, like newsprint, commercial vehicles and cars, synthetic yarn and fibre and industrial machinery production is likely to be equal to the plan targets or a little more. However, shortfalls may occur in case of steel ingots and saleable steel, non-ferrous metals, certain chemicals, and fertilisers. Production of cement, synthetic rubber and agricultural tractors are likely to be equal or near about the plan targets.

A notable success

A notable success has been in the production of crude oil and petroleum products. In fact, during the remaining period of the plan their production will be substantially in excess of the original target.

The appraisal also forecasts that generation of electricity will be about 170 billion units in the last year of the plan, while additional power generating capacity will be of the order of 14,000 to 14,500 MW. These represent increases by over 51 per cent in generation and 46 per cent in capacity addition over 1979-80.

In the first four years of the plan, additional resource mobilisation both by the centre and the states is likely to exceed the targets for the whole of the sixth plan. This represents a substantial effort in resources mobilisation by the public sector. However, in overall availability of resources for the plan, there has been a heavy deficit in the states, principally due to the state electricity boards and state transport corporations not achieving their targets of surpluses.

But shortfalls are part and parcel of planning process and after a close and detailed evaluation of the performance so far and the prospects for the remaining 20 months of the sixth plan, one cannot but agree with Mr. Chavan that the estimated growth over the plan period will be close to the plan target, and the comparatively efficient use of resources together with structural adjustments have developed significantly the resilience and self-reliance of the economy.

(Courtesy : All India Radio)

Mid-Term Appraisal

Sixth Plan targets will be mostly fulfilled

According to the Mid-term Appraisal document, which was laid on the table of both Houses of Parliament, the plan targets are to be fulfilled in full or in adequate measure.

The Mid-Term Appraisal of the Sixth Five Year Plan reveals a hopeful trend both towards strengthening the resource base of the Sixth Plan as well as achieving physical targets, despite natural calamities like severe drought, floods and cyclones in different parts of the country and the continuing general recession in the world economy.

The Mid-Term Appraisal document was laid on the table of Houses of Parliament recently by the Minister of Planning, Shri S. B. Chavan.

The mid-term exercise shows that the Plan targets will be fulfilled in full or in adequate measure in a number of areas, including many in the sectors of agriculture and industry. The most significant achievement is, however, on the front of production of crude oil and petroleum products. The production of crude oil during 1984-85 is likely to go up to 27.52 million tonnes as against its target of 21.6 million tonnes. But special efforts will be called for to improve performance in some other areas notably in the infrastructural sectors, says the document.

Specifically, as against the 1984-85 foodgrains production target of 149—154 million tonnes projected in the Plan, the achievement may be nearer the lower end of the range i.e. 146—148 million tonnes. However, the production of other crops, like jute and mesta, cotton, the five major oilseeds, tea and coffee will be generally equal to the Sixth Plan targets. The production of sugar and vanaspati is likely to equal or even exceed the targets.

The Manufactured Goods

In the field of manufactured goods, the production of newsprint, low-density and high-density polyethylene, paper and paper board, DMT, viscose filament yarn, polyester filament yarn and acrylic fibre, decentralised sector cloth, commercial vehicles together with passenger cars and jeeps, and industrial machinery generally, is likely to be equal to the Plan targets or a little more. However, shortfalls in production against Plan targets are likely in the case of steel ingots and saleable steel, non-ferrous metals (aluminium, blister copper and zinc), caustic soda, soda ash and sulphuric acid, PVC, mill sector cloth, power cables and electrical transformers, as well as in the electronics sector generally. Production of synthetic rubber, caprolactam, Cement, hydro and thermal turbines, and agricultural tractors is likely to be equal to or near about the Plan targets. The production of nitrogenous and phosphate fertilisers is likely to be slightly short of target while production of iron ore and concentrates is likely to fall appreciably short of target.

The production of crude oil and petroleum products will be substantially in excess of the original Plan target, as a result of the large increase in investment as compared to the Plan, decided upon with a view to quickest achievement of self-reliance in this sector. Generation of electricity will be about 170 billion KWH in the last year of the Plan, while additional generating capacity installed over the Plan period will be of the order of 14000—14500 MW. While these represent increase in electrical generation by over 51 per cent and capacity addition by over 46 per cent compared to 1979-80, there are, nevertheless, shortfalls in these two areas against the Plan targets of 191 billion KWH and 19666 MW respectively. Coal production is expected to be 154 million tonnes against the projected 165 million tonnes. This, again, would be a 50 per cent addition to the production level at the beginning of the Plan. Here, however, it is likely that this order of production, with draw-down from accumulated stocks, would be adequate to meet requirements. Lignite production will hit the Plan target. Railways originating traffic, which is a derived demand, is likely to be only 280-285 million tonnes as against the original target of 309 million tonnes.

Overcoming Difficulties

The Mid-Term Appraisal of the Sixth Five Year Paln mentions of the extremely difficult circumstances and a number of unfavourable factors when the Plan actually started in 1980-81 and those existing in the year 1979-80.

It is significant to note that almost complete recovery of the economy was achieved in 1980-81. This was due largely to the ambitious investment programme of the Sixth Plan. This was concentrated in all the major infrastructure sectors, which had stagnated in the years immediately preceding the Sixth Plan. Indeed, in 1980-81 the economy was set for a fast growth and development in alignment with the major targets of the Sixth Plan and the GDP grew by 7.9 per cent.

In 1981-82, almost all the sectors picked up the growth rate stipulated in the Plan and the GDP went up by 5.2 per cent. Thus, over the first two years of the Plan, the economy grew at a rate of 6.5 per cent in real terms, exceeding the Plan annual growth rate of 5.2 per cent, per annum. The year 1982-83, however, proved to be a very bad year for agriculture with severe drought, floods and cyclones in different parts of the country. However, the damage to the economy was significantly minimised, principally as a result of the public sector programmes, and the fall in foodgrain production was comparatively much lower than in previous years of the adverse seasonal conditions.

The growth rate in 1982-83 is estimated to be 2 per cent. Industrial growth which was 5.6 per cent in 1980-81 and 8.6 per cent in 1981-82 fell to about 3.5 per cent in 1982-83. The average growth rate of the economy over the first three years of the Plan came to 5 per cent. This performance has to be viewed in the background of a number of growth decelerating elements prevailing during this period. The recession in the international situation continued, the recovery being extremely slow.

The international trade prospects also continued to be gloomy. Between 1980-81 and 1982-83 the growth of international trade was almost zero. India's realised volume of growth of export of 1.4 to 1.5 per cent should be seen against this background. The Government's efforts to protect the development activities of the economy were successful and the domestic rate of inflation was insignificantly reduced as measured by the movement in the wholesale price index from the very high rate of nearly 18 to 20 per cent in 1980-81 to around 2 per cent in 1982-83.

Additional Resource Mobilisation

Additional resource mobilisation both by the Centre and the States is likely in the first four years of the Plan, to exceed the targets for whole of the Sixth Plan. This represents a substantial effort in resource mobilisation by the public sector. The respective performances are given in the table below :

In overall availability of resources for the Plan, however, there has been a heavy deficit in the States, principally due to the State Electricity Boards and State Road Transport Corporations not achieving their targets of surpluses. Increases in current expenditure on the services sector, due partly to DA and wage increases, have also cut into the resources available for developmental outlays, both at the Centre and in the States. The mobilisation of additional external borrowings has been close to target and a prudent foreign exchange reserve policy has been adopted in the initial years of the Plan, both for protecting essential tecnological imports and for facilitating the required structural adjustment of the country's economy.

Taking the first four years of the Plan, the total actual or approved outlays come to 83 per cent (Rs. 79.880 crores) of the public sector Plan outlay of Rs. 97,500 crores. However, inflation, particularly in the costs of capital goods, especially imported capital goods, has eroded the real value of the Plan investments. At 1979-80 prices, this represents 62 per cent of the Plan outlay. For 1983-84, it has been decided now to raise the Centre's Annual Plan investment by Rs. 800 crores directed mostly towards the core sectors. Public sector investment in real terms would have been higher but for the adverse factors already mentioned and such exogenous causes as the second oil price hike. □

(Rs. crores)

	VI Plan 1980--85 target	1980-81 actuals	1981-82 actuals	1982-83 (Latest Estimates May '83)	1983-84 (Plan)	Total 1980—84
Centre	12,290	501	2,597	3,960	5,623	12,681
States	9,012	425	1,573	2,849	4,388	9,235*

*Includes State's share in the yield from Central measures.

PM on Universalisation of elementary education

Prime Minister, Smt. Indira Gandhi, in a message for the National Campaign organised to give a thrust to universalisation of elementary education, as part of the new 20-point programme, said :

"Education is essential for people to fully develop their capabilities and personalities. Our priority is for the universalisation of elementary education, hence school enrolment must be increased throughout the country. The results of last year's campaign are encouraging. Enrolment targets were exceeded. It is equally important that children once enrolled actually complete school education. This needs greater commitment from parents and teachers. Education must not appear to be a chore, but an exciting voyage of discovery, a ladder to progress.

Schools must widen their scope and think of combining health care with education as well as instruction in extra-curricular activities. School-going should evolve into a complete child development system.

Women's education is a matter of serious concern. Women must be made aware of their rights as well as responsibilities, and learn to grapple with the myriad problems on human relationships no less than the problems of contemporary society. They must keep and give to coming generations the cultural roots so necessary for character and equilibrium. It is appropriate that this year's campaign is concentrating on this aspect, along with the education of other weaker sections.

Let the people of India—parents, teachers and community leaders in town and countryside—join with the Government in making the campaign a success." □

The Annual Plan 1983-84

Tempo of growth to be accelerated

The Annual Plan 1983-84 *has accorded high priority to further development of the infrastructural sectors and augmentation of capacities in industries, providing basic and critical inputs like steel, fertilizers, non-ferrous metals etc.*

The 1983-84 Annual Plan, with a total outlay of Rs. 25,480 crores in the public sector and representing an increase of 21.72% over the approved Plan outlay of Rs. 22,930 crores for 1982-83, aims at accelerating the most important social and economic programmes directed towards ameliorating the living conditions of weaker sections of society.

The Annual Plan 1983-84 was presented to Parliament recently by the Union Minister of Planning and Deputy Chairman, Planning Commission, Shri S. B. Chavan.

Care has also been taken to ensure all round improvement in productivity. High priority has been given to further development of the infrastructural sectors and augmentation of capacities in industries providing basic and critical inputs like steel, fertilizers, non-ferrous metals, etc. In view of the crucial importance of energy and the need to reduce further the dependence on imported oil, the outlay for this sector has been stepped up by 24.2 per cent on top of an increase of nearly 40 per cent in the Annual Plan for 1982-83. The step-up in the outlay for the petroleum sector in 1983-84 is as much as 43 per cent. The provisions for transport and irrigation (including flood control) has been stepped up by 20.0 per cent and 11.8 per cent respectively. The three sectors of irrigation, energy and transport account for 54.2 per cent of the total provision for public sector Plan outlay in 1983-84. The year-wise step up (over the previous year) in expenditure/outlay approved for these three key sectors over the period 1980—84 was as follows :

Percentage increase in Expenditure—Outlay 1980—84

	1980-81	1981-82	1982-83	1983-84
	1979-80	1980-81	1981-82	1982-83
Irrigation (including flood control)	6.68	9.63	10.04	14.93
Energy	27.39	32.31	37.01	23.55
Power	18.58	19.78	20.08	18.60
Coal	54.82	53.78	31.37	8.49
Petroleum	51.83	63.88	10.97	39.10
Railway Transport	36.22	24.36	10.08	0.77

Maximum emphasis has been placed on speedy completion of the projects in advanced stages of implementation. New starts will be made on a highly selective basis, taking into account all relevant factors including future demand projections and gestation periods. In the industrial sector, adequate provision has been made for balancing equipment and timely replacement of assets in order to maximise production from the existing capacities. Stress has also been laid on the poverty alleviation programmes.

Agricultural Production

Agricultural production in 1982-83 as adversely affected by unfavourable weather conditions and consequently, would be much lower than in the preceding year. An all-out effort will, therefore, be necessary to ensure that this set back is made good and that there is appreciable rise in agricultural production in 1983-84.

The target of foodgrains production for 1983-84 has been fixed at 142 million tonnes. To realise this target, it would be necessary to extend irrigation facilities further and ensure adequate supplies of other critical inputs like fertilizers, pesticides, electricity, diesel, credit etc. The arrangements for systematic transfer of know how from research centres to farmers' fields will have to be further strengthened.

In the field of irrigation, The Annual Plan envisages quick implementation of ongoing projects, efficient water management and modernisation of the existing irrigation system. The irrigation potential is proposed to be increased by 2.37 million hectares. The effort to reduce the gap between irrigation potential and actual utilisation will be further stepped up.

The area under high-yielding varieties is expected to go up from 48 million hectares in 1982-83 to 52 million hectares in 1983-84. Consumption of fertilizers is expected to go up from 6.4 million tonnes to 7.2 million tonnes during the same period. Steps are also being taken to increase the availability of other inputs like electricity, diesel and credit.

Special emphasis has been placed on increasing the production of pulses and oilseeds which have been accorded high priority in the Revised 20 Point Programme.

On the assumption that the monsoon would be normal, the Annual Plan envisages the following targets for 1983-84 in respect of major agricultural crops :

	1982-83 anticipated output	1983-84 targets
Foodgrains (million tonnes) . . .	126.8	142
Oilseeds (lakh tonnes) . .	108.0	125
Sugarcane (million tonnes) .	183.6	180 185
Cotton (lakh bales)	80.0	82.85
Jute & Mesta (lakh bales) . .	71.7	82.85

IRDP and NREP Programmes

The Integrated Rural Development Programme, which is a key poverty alleviation programme and aims at raising the income levels of target groups below the poverty line will be implemented with greater vigour. The target of additional beneficiaries to be covered under the programme during 1983-84 is 3 million An effort will be made to ensure that at least 30 per cent of the beneficiaries are from the category of Scheduled Castes and Scheduled Tribes.

The National Rural Employment Programme, which aims at providing supplementary payment opportunities in rural areas, especially during the slack season, and, at the same time, at creative durable community assets, is expected to generate additional gainful employment to the extent of 300-400 billion mandays during 1983-84.

Under the Minimum Needs Programme, which aims at providing certain minimum basis amenities and facilities to people particularly the weaker sections throughout the country, the activities will be substantially stepped up. The outlay for this programme has been raised from 1164 crores in Annual Plan for 1982-83 to Rs. 1559 crores in 1983-84 e g. approximately 33.9 per cent.

Employment

Due attention has been given to the employment aspect in the formulation, of the Actual Plan. The poverty alleviation programmes mentioned above would generate additional employment. Besides, the Plan includes a number of labour-intensive schemes. Particular emphasis has been laid on the development of village and small industries, which are expected to increase employment opportunities with comparatively low levels of investment and through utilisation of local resources and material. The national scheme of Training of Rural Youth for Self-Employment (TRYSEM) which has a target of training 2 lakh rural youth per year, will be continued. Thirty Employment Exchanges are proposed to be strengthened so as to enable them to provide guidance on various matters to the interested persons for taking up self-employment ventures individually or in a group.

Energy

The demand for coal in 1983-84 is expected to be around 147 million tonnes. Taking into account the urgent need to liquidate pithead stocks by at least 4 million tonnes as well as the requirement of imported superior quality coal to the extent of 1.2 million tonnes, the target of coal production for 1983-84 has been fixed at 142 million tonnes.

The Plan continues to lay emphasis on the aspects of exploitation, beneficiation and utilization of coal as well as the creation of infrastructural facilities necessary for these purpose. Capitive power generating capacity for coal mines is being planned.

The target of crude oil production for 1983-84 has been fixed at 26.25 million tonnes. It is expected that optimal refining capacity at the Mathura and Koyali refineries would be achieved with their Fluid Catalytic Cracking Units going into commercial production. The work of laying the Bombay-Poona Pipeline would also pick up. The crude throughout target for the refineries for 1983-84 has been fixed at 34.42 million tonnes.

About 4157 MW of additional generating capacity is proposed to be installed during 1983-84 raising the aggregate installed capacity in the country to 42,240 MW by the end of March 1984. Assuming normal monsoons in 1983-84 and taking into account the anticipated further improvement in capacity utilization of thermal plants, total power generation is estimated to record an increase of 10.4 per cent over 1982-83. The pace of rural electrification is to be accelerated. The targets fixed for electrification of villages and energisation of pumpsets in 1983-84 are 23.630 and 3.68 lakhs respectively.

Mobilisation of Resources

The scheme of financing the public sector plan is essentially non-inflationary in character. The budget deficit at the Centre for 1983-84 has been kept at Rs. 1586 crores (which is lower than the Revised Estimates for 1982-83 of Rs. 1935 crores excluding Rs. 1743 crores given to the States to clear their deficits as on 31st March, 1982). The deficit is expected to be consistent with the objective of maintaining reasonable price stability. The State Government have agreed to avoid recourse to unauthorised overdrafts from the Reserve Bank. Strict control on non-plan expenditure, further tightening up of tax administration and additional resource mobilisation on the scale have been contemplated. Public enterprises including State Electricity Boards and Road Transport Corporations will have to further improve their performance and generate larger resources.

Balance of Payments

The pressure on balance of payments would continue in 1983-84. Since credit under the Extended Fund Facility of IMF would be available only upto 1984-85, it is urgently necessary to make a further substantial thrust towards the structural adjustments indicated in the Sixth Plan in order to ensure that the country's development efforts do not suffer due to balance of payments constraints in future.

The import-export policy for 1983-84 is designed to reduce the trade gap. It would provide support to

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Kalpakkam Atomic Power Plant

India proves indigenous capability

When the first of the two 235 MW units of the nuclear power station at Kalpakkam near Madras went critical at 8.41 p.m. on July 2, 1983, India proved to the world that it can launch a fully Indian designed, Indian engineered and Indian built nuclear power plant. By joining the select band of such countries, India firmly established its position in the nuclear club, that it joined nine years ago. India's peaceful nuclear explosion in 1974, triggered off a halt to export of nuclear equipment to India. That proved a blessing after all. The entire Kalpakkam plant had to be redesigned. India lost a couple of years, but we became self-reliant.

T. G. Nallamuthu

"WE WANT TO MAKE deserts bloom and not make the world a desert", declared the Prime Minister Mrs. Indira Gandhi as she commissioned and dedicated the Kalpakkam nuclear power project to the nation. Emphasizing that India had no intention of embarking on a nuclear weapons programme, Mrs. Gandhi said "Our science, particularly nuclear science, is dedicated to development, the achievement of freedom from want and the provision of essentials and an honourable life for the masses."

The starting up of the first unit of the Madras Atomic Power Station is a momentous event in the history of the atomic energy programme of the country and indeed in the history of its scientific and technological development. Outside of the USA, USSR, UK, France, West Germany, Canada, Sweden and Japan, India is the only country that has established a capability to design, built and commission nuclear power units on its own. It is true that this endeavour has taken much more time than had initially been estimated, but considering the limitations of infrastructure, the complexity of the technology and the restrictive international regime in the flow of goods and services related to nuclear technology, it is indeed an achievement of which the country can legitimately be proud of.

Break-through

In what way does Kalpakkam constitute a break-through for the Indian nuclear programme ? What was attempted here was not the mere construction of a nuclear power station but the setting up of national capability over a wide range of technology, the engineers of the department point out. A case in point is that while many of the items of nuclear equipment have been made for the first time in India, even some of the conventional pieces of equipment required for the project have been fabricated for the first time. The turbine generator comes in this category—it is the largest unit to be manufactured in India. This is also true of the pumps which circulate sea water through the condensers of the power plant. Many other examples are given of the DAE's considerable efforts to locate and develop indigenous capability in areas not tried before. Another unique feature of Kalpakkam is that the critical materials required for the project, namely heavy water zirconium alloy for the structural members of the reactor and the finished uranium dioxide fuel have all been produced in the country.

According to experts, the experience gained with the commissioning of MAPP will enable India to accelerate its programme of producing electric power by harnessing the atom, to give the much needed relief to the electricity systems in the country and speed up industrial and agricultural development. In this sense, MAPP is going to determine the future pattern of atomic power generation in the whole country. This is a vital project for the country as it is showing the way towards lowering the costs of energy. Engineers who shouldered the burden of putting it up say the job was a most challenging one since they operated in a new and highly complex field of technology where specifications and quality were necessarily of the most stringent and exacting level and the emphasis was on self-reliance without dependence on foreign sources either for materials or technical knowhow.

The Kalpakkam Atomic Power Station incorporates twin Candu-type pressurised heavy water reactor systems. Its main features are: (1) the use of natural uranium (non-enriched) as fuel; (2) this type of reactor, because of the good neutron economy, offers a high specific power rating (specific energy that can be extracted per gramme of fuel) and this results in a more effective utilisation of fuel. India's proven reserves of uranium, though significant, are not very great and hence call for judicious exploitation. DAE experts think that the pressurised heavy water system is eminently suited to India's long-term needs. The continuing emphasis on this system enabled Indian manufacturers to develop over the years the capability to fabricate the various specialised components of the station. This is expected to bring about an increasing amount of indigenisation for the successive reactor units being taken up.

Into the future

Fast Breeder Reactor Getting Shape

The Reactor Research Centre (RRC), located alongside the Madras Atomic Power Project, is primarily devoted to the indigenous development of the sophisticated technology of plutonium-fuelled, liquid-sodium-cooled, fast breeder reactors, for the second stage of the Indian Nuclear Power Programme. The Centre owes its origin to the far-sighted vision of the late Vikram Sarabhai who was responsible for selecting and enthusing the first team of talented scientists and engineers, and entrusting them with this vital responsibility.

The Fast Breeder Test Reactor (FBTR) is a liquid-sodium-cooled, plutonium-fuelled loop-type fast reactor (capacity 42.5 Mwt and 15 MWe), similar in design to the French fast reactor Rapsodie. The fuel for this reactor is however an Indian design, based on plutonium-uranium carbide in the form of sintered pellets, encapsulated in thin-walled stainless steel tubes. There will be 61 such sub-assemblies in the core, which will be surrounded by blanket and reflector assemblies. Liquid sodium will be circulated through the reactor—to extract the fission heat. Heat from the primary sodium circuit is transferred to secondary sodium in intermediate heat exchangers. The hot sodium from the secondary flows through the steam generator to produce high pressure steam to run the turbine and generate electrical energy.

A very important aspect of the project is that while the original designs had been obtained from France, it was decided to fabricate all the major components like the Reactor Vessel, Sodium pumps, Intermediate Heat Exchangers and Steam Generators within the country. This has been successfully achieved with the participation of Indian Industry—both in the public and the private sectors.

As compared with thermal reactors of the type already in operation in Rajasthan and now under commissioning at Kalpakkam, fast reactors are different in many ways. The fission chain reaction in fast reactors is maintained with fast neutrons, in the absence of a moderator and this requires a much higher concentration of fissile material in the fuel (Pu 239 or U235) than the natural concentration (of U235 in the thermal reactors. The higher concentration and the smaller core volume contributes to a high power density in the core, and hence for efficient heat extraction, a liquid metal like sodium is used as the heat transfer medium. The overall reactor configuration offers a much better neutron economy, with the result that it is possible to produce more fresh fuel during fast reactor operation (by conversion of U238 to Pu 239 in the blanket zone) than is consumed in the core, and this 'breeding' possibility is the principal justification for the sophisticated technology of fast reactors. Whereas in the operation of thermal reactors, only part of the natural concentration of U235 (0.7 per cent) is utilised with less than equivalent production of plutonium, the fast breeder opens the vista for the utilisation of the energy potential of the far more abundant U238 and for thorium utilisation in future.

As the first phase of the programme at the Reactor Research Centre is getting completed, a beginning has been made on the design of a prototype Fast Breeder Reactor, of capacity 500 MWe. The Working Group that was constituted for this purpose in 1981 has completed its work and the Feasibility Report and the Preliminary Design Report for this large reactor have been prepared. While the size of the proposed reactor is a large jump from that of the FBTR, the setting up of such a commercial-sized reactor by the year 2000—with the full participation of Indian industry—will provide the impetus for a series of such reactors to be built in the early decades of the next century. Analysis has shown that the organisation of such a large Fast Breeder programme is important not only from the point of view of the overall nuclear strategy but also for the effective conservation of our limited coal resources. □

A brief account of the unique features of the construction of the Kalpakkam atomic power station would not be out of place here. The reactor building is the first fully prestressed concrete nuclear containment structure in India. The site is characterised by an overburden of land for a depth of 30 feet followed by soft disintegrated rock and then hard granite. High subsoil water, existing as close as five feet below, necessitated large-scale pumping of the water for open excavations.

A novel method known as the diaphragm wall technique was used for construction under these conditions. This method was successfully employed for the construction of a five lakh gallon capacity underground process water supply tank as well as for the shielding wall for the reactor buildings. One factor contributing to the selection of Kalpakkam was that the area around this place is sparsely populated and the necessary public and environmental safety could be secured without difficulty. The sea water intake system, through an undersea tunnel, in Kalpakkam is the first of its kind in India.

The indoor switched yard is also a first for an Indian Power Station.

The first unit is estimated to cost Rs. 119 crores while the second unit is likely to cost about Rs. 127 crores. Power generation is estimated to cost 35 paise a unit.

Firm power from the plant is expected to flow to the southern grid in the next few months. Right now various tests are being carried out and power will start flowing to the grid off and on. Simultaneously work on the second unit is under way and this is expected to be commissioned in another eighteen months. When in full bloom, Kalpakkam will generate steadily, power that is comparatively cheaper and feed the southern grid that is starving today.

Twenty-point programme : A synopsis

The ultimate success of 20-point programme would be possible only when the local people take interest and extend their cooperation. The programme should be flexible enough to be able to adjust local priorities.

D. N. Kakar

EVEN AFTER THREE DECADES of independence and planned economic development the country was showing only a marginal achievement as far as progress in economic, social, agricultural, institutional and other sectors of the economy were concerned. To find a solution to them and also to do something concrete for the masses in general the Prime Minister Mrs. Indira Gandhi launched her 20-point programme on July 7, 1975. This proved to be a source of inspiration for the economic as well as the overall development of the country. Conditions of political stability being favourable and with the bureaucratic machinery in top gear the targets of the various programmes were achieved as a result of concerned efforts all over the country so as to make the programme a success.

However, the country witnessed a change in the political climate and power shifted into the hands of the Janata regime who had their own ideas regarding the methods to be adopted for achieving greater prosperity in the country. Consequently, the 20-point programme faded into oblivion. By the time Mrs. Gandhi came back to power, the economic situation had undergone a considerable change. The intense inflationary pressures which had gripped not only our own economy but were felt on an international level had eased. All the same, much was required to be done to set things right and so 1982 was declared as 'Productivity Year' and during this year Prime Minister declared her new 20-point programme on 14th of January 1982. Keeping in view the objectives of the programme the whole programme can be broadly divided in four parts.

Four objectives

Full utilisation of production potentiality of the nation and also to increase the productivity in agriculture as well as in non-agriculture sectors. To attain this objective it has been suggested to cover more land under irrigation, encouragement to dry farming, increase in the production of pulses and oil seeds, integrated rural development programmes, land to landless labourers, minimum wages to agricultural labours etc. are the main objectives.

The second main objective of this programme is to attain economic equity and distribute the fruits of development to masses, enabling them to have food, clothing, shelter, education etc. the basic necessities. Under this objective following efforts are to be made: to provide, cheap land for housing, free basic education, adult education, child and women welfare programmes, rehabilitation of bonded labours. Expansion of public distribution system and public health programmes, liberal industrial policy and efficiency in public sector enterprises.

The third main objective of the programme covers social activities like family planning programme, forest plantation, development of alternative energy sources.

Lastly, the programme aims at removal of anti-social elements, speculators, smugglers, tax evaders.

Framed in a hurry

Thus we find that the new 20-point programme has a wider coverage. But it appears that the programme has been framed in a hurry as it ignores some of the most important objectives e.g. price stability, to check inflationary pressure (although they were included in old 20-point programme) soft banking policy etc. one may also question why there are only 20-points in this new programme also. But it is not so relevant for the present discussion. One thing has to be clarified here that no prior approval of the Planning Commission has been taken for this programme. Therefore, it should be considered as prime minister's economic policy. However, there is no clash between the objectives of economic planning and 20-point programme. However, there has been a shift in the objectives of the new 20-point programme than old one. To curb inflationary pressure was the most important objective of old programme, while emphasis has been given on the betterment of agricultural and non-agricultural labour in the new programme. It would have been better if it could have included the problems of construction labour also. Besides a number of programmes of the upliftment of poor people, minimum needs programme of Janta government called "Antyodya" has also been included in the scheme which shows a healthy political awareness.

Efficient working, key to success

The objectives of any economic policy may depend upon political motives and election manifesto but their success lies in the efficient working of the government machinery, co-operation of the public and keen interest of the party workers. In the old 20-point programme responsibility of the success of programme was laid down mainly on party workers who had no powers and experience of working for

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A Case Study

Wages of child labour

The labour policy of Government seeks to protect children below 15 from exploitation. But many children are working for long hours in small restaurants which are the major employers of the child labour. The reasons why these children seek jobs are poverty, lure of city life, and for payment of loans their parents have taken.

Dr. G. Krishna Murthy and Smt. T. Jyothi Rani

CHILDREN ARE UNIVERSALLY RECOGNISED as the most important asset of any nation. Proper education and congenial atmosphere at the impressionable age of 10 to 14 years is necessary. The National Commission on Labour has found that child labour is prevalent in varying degrees in the unorganised sectors such as restaurants, hotels, handicrafts, brick kilns etc. According to 1971 population census there were 10.74 million child workers in the country representing 4.66 per cent of total child population and about 6 per cent of the total labour force. The Planning Commission has estimated that by 1983 the child labour in India would increase to 17.36 millions. The incidence of child labour is the highest in Andhra Pradesh where the child labour accounts for about 9 per cent of total labour force.

The labour policy of the Government is that the tender age of children should not be allowed to be exploited and the economic necessity should not be the reason for them to enter into avocations unsuited to their age and strength. But petty traders and employers prefer to engage children as they are cheaper, more amenable to discipline and control. The majority of employers exploit child labour. The work extracted from the child labour is out of all proportions to the wages paid.

The present study attempts to examine the pattern of wages of child labour in small restaurants in the context of the minimum wages prescribed by the State Government. It also probes into socio-economic variables that motivate the employers to engage child labour and the employees to get into service. For this purpose a sample of 20 small restaurants out of 62 operating in Warangal City area were taken. The invested capital of these restaurants is between Rs. 1000 and Rs. 15000. The study is based upon the primary data collected by interviewing the 20 employees and 28 child-workers through a structured questionnaire.

Warangal City in Andhra Pradesh has a population of 3.30 lakh. All the hotels and restaurants under study are classified under 'B' category for the purposes of labour regulations. The employees working in this segment of canteen industry are covered by the Andhra Pradesh Minimum Wages Rules, 1969 and Shops and Establishment Act, 1966. Hotel workers have an organised labour union in the city but the child-workers are not the members. The Trade Union Act, 1926 permits admission of the persons of 15 years and above age. Thus child workers do not have the benefit of collective bargaining.

Child labour is characterised by low-wages, uncertainty of employment, shifting employers and jobs, lack of trade unions and casualism. The child labour offers a genuine example of informal sector of the labour market. The wages are normally fixed on the basis of workload, nature of work, capacity of the employer to pay, strength of the bargaining power of the employee and hours of work. These apart, wages of child labour are influenced by heterogenous factors, such as traditions, ethical considerations, levels of income productivity, production, Government policy. This paper aims at examining the importance of such factors in wage determination.

Extent of Child Labour and Work Load

In big and centrally located starred hotels child labour is not considerable, but in small restaurants child labour is very much prevalent. Information regarding the child labour was given by 12 restaurants. 8 restaurants did not respond to the questions.

The work-load in restaurants is generally assessed by the number of seats to be served. Child labour employment varies between 25 and 67 per cent of the total labour force. Regarding the work-load of child worker, the average number of tables to be served by one worker gives a good indication. The child labourers are engaged to clean the tables and vessels. Wherever, the child labour is 50 per cent and above, the average table to be attended to varied between 6 and 16. The average number of tables to be served by child worker works out to roughly 10. There were 5 units in which the work-load was more than the average.

Nature of work

An important argument put forth by the employers of child labour for paying low wages is that the workload is comparatively less than that of the adult workers. Again the employers say that the nature of work assigned to the children is relatively light, and does not demand any skill, experience and education. In view of this they deserve only lower-wages. Table I explain the nature of work being attended to by the 28 children interviewed.

Table I
Nature of Work

Type of work	No. of children attending	% to total interviews
Washing of Vessels	28	100
Cleaning of Tables	26	93
Water Procurement	20	72
Door to door service	12	43
Supply and service	2	7

Mostly the child labour in restaurants is assigned the work of washing of dishes and cleaning of tables. As Warangal city has chronic water problem, about 72 per cent of interviewes reported that they have been attending to the water procurement work. The door to door service is another job being attended to by 43 per cent of interviewees. In this type of service the child-worker is singularly exposed to the unfamiliar and discourteous customers outside the work place.

Capacity to Pay

The capacity of the employers to pay is one of the important factors that realistically works in the process of wage determination. This tenet indirectly touches upon the wage fund theory. Their capacity is assessed firstly by their investment and secondly by the daily turnover. The former is a fixed variable while the latter may vary significantly in a short period. In other words, the wages and investment and wages and turnover relationships are positive.

The wages vary more closely with the changes in capital employed than with the turnover. To measure the extent of economic relationship between wages and capital and wages and turnover correlation coefficients are computed. The 'r' between turnover and wages is only 0.38 where as it is 0.88 between capital employed and wages. The co-efficients of determination (r2) are 0.14 and 0.77 respectively. Therefore it is clear that the wage structure bears no direct relationship to the turnover but is greatly influenced by the capital employed. These analysis bring to surface two behavioural aspects viz., large initial capital peps up the employer to pay higher wages and the larger turnover encourages the employer to use the existing labour to the maximum extent without corresponding increase in the pay.

Reasons for employing children

Besides the capacity to pay expressed in quantitative terms as the basis for wage determination, the employer may also have some other subjective reasons for employing children. Table II lists out such reasons. The enquiry with the employers on this aspect revealed that 6 employers have more than one reason for recruiting children in their establishments.

Table II

Reasons for the recruitment of children

Reason	No. of responses	% to total interviews
1. Adults do not accept the job that is being attended to by children . .	8	40
2. Low wages	8	40
3. Out of sympathy to help children .	6	30
4. Adults are not amenable to control .	2	10
5. Tradition	2	10

Out of the above five reasons greater emphasis is laid on the unwillingness of the adults to do the job and the low wages offered. The adults do not accept the job of washing the vessels and cleaning the tables as for this job they have to stay for longer hours. Two employers expressed the difficulty of employing adults as they are more rebellious and repulsive and they are not amenable to control. Two other employers have skipped the issue by saying that it is a tradition to employ children. About 30 per cent of respondents told that the sympathy rather than the desire to exploit them as the reason for employing children.

Wage structure

In restaurants wages are paid in cash as well as in kind. The former is a major component while the latter may vary between 40 per cent and 50 per cent of the total wage. Food is the most common kind component of wages in almost all restaurants. Table III presents various components of wages being received by the employees.

Table III

Components of wages

Components	No. of Employees	% to total interviews
(i) Cash	28	100
(ii) Food	28	100
(iii) Daily allowance	20	71
(iv) Shelter	18	64
(v) Clothing	6	21

The data given in the table reveals that almost all the child employees receive their wages in cash along with food. About 71 per cent of the employees get daily allowance of less than half a rupee and 64 per cent get shelter in addition to cash and food as wages. In order to calculate the total wages the kind components of wages are to be converted into money value. The Andhra Pradesh Minimum Wages Rules, 1969 gives the value of food and accommodation for conversion purposes. According to these rules food and shelter are to be valued at Rs. 55 and Rs. 5 per month respectively. With regards to clothing and allowance the rules are silent. Total wages are computed only by considering the cash wages of food and shelter.

The maximum wage ranging between Rs. 130 and Rs. 150 is being received by 50 per cent of child workers. Only 21 per cent of employees are paid the highest wage. Out of 28 child-labour about 72 per cent are paid a wage ranging between Rs. 90 and Rs. 130. Thus majority of workers are receiving Rs. 3.60 on an average per day which is distressingly low as compared with the payments in any other industry. The Andhra Pradesh Minimum Wages Rules prescribe that a cleaner of Tables, Vessels, Waterman and Room boy etc. is to be paid a minimum of Rs. 190 per month and for children 75 per cent of such wages is the minimum. Thus the minimum wage of child-worker will have to be about Rs. 150 per month. The frequency distribution given above explains that about 80 per cent of the employees are receiving less than the statutory minimum. Regarding bonus, the child-labour knew nothing about it. The employers explain that the question of bonus does not arise for child-worker because they would not stay in the job continuously not even for 6 months.

Even if we ignore the working conditions, hours of work and a lack of holidays any one can find that the wages paid to children are meagre in restaurant industry. As such the question is when the employers are not ready to pay the minimum wages why should the workers agree to work. On the part of the employees there should be some genuine reasons to accept these low wages. The reasons as stated by the 28 child labourers for accepting this service in spite of low wages are presented in table IV.

Table IV

Reasons for seeking the jobs

Reason	No. of children	% to total
(i) Poverty	14	50
(ii) To enjoy city life . . .	8	29
(iii) For redemption of loans . .	4	14
(iv) To gain experience so as to establish their own restaurants . . .	2	7
TOTAL	28	100

Poverty is the main reason for 50 per cent of children to seek such jobs even with meagre wages. Lack of education, irresponsible parents, tender age are some more innate reasons for them to enter into service with low wages. In brief, economic compulsion and lure of city life are found to be main reasons. Both the economic and non-economic reasons played a major role in their entry into the service. Out of the 28 child-workers 14 (50 per cent) stated that parents and relatives had introduced them to the job, 8 have obtained the job with the help of their friends and 6 tried by themselves and got jobs. This induction pattern manifests the significance of non-economic reasons.

Further enquiry about their place of birth, revealed that all the 24 out of 28 hailed from rural areas.

Hours of work and holidays

Longer hours of work is another exploitative factor which lowers the value of already lower wages. The hours of work for child worker should not be as long as that of adult worker because the children may get tried and cease to develop mentally. Therefore the labour rules provided that no child should be allowed to work for more than 4 hours a day. But in actual practice children either work as long as the adult workers or even more. Table V gives the hours of work as reported by the 28 child workers.

Table V

Hours of work for children

Hours of work	No. of children	% to total
6—8	2	7
8—10	16	57
10—12	10	36

The statutory limit of 4 hours of work for children is no where found in practice. The minimum hours of work imposed are 6 hours and maximum is 12 hours a day. Regarding holidays 20 children report that they have weekly holidays as the restaurants are generally closed at least one day in a week. Out of the 28 child workers 8 state that they do not have any holidays except with loss of pay. Thus the longer hours of work and absence of holidays together will further reduce the wage rates that are in vogue. □

Tempo of Growth

(*Continued from page* 8)

the growth of indigenous industries facilitate technology upgradation with special emphasis on export promotion and energy conservation give further impetus to exports in general and help in saving on imports.

The 1982-83 review of the economy reveals that despite widespread drought and floods in certain parts of the country seriously affected the Kharif output and the economy as a whole. The Gross Domestic Product (GDP) is expected to increase by 2 per cent in 1982-83. However, due to the 1980-81 GDP 7.9 per cent and 5.2 per cent in 1981-82 the average real rate of growth would work out to about 5 per cent which is fairly close to the average annual of 5.2 per cent as envisaged in the Sixth Plan. □

IRDP and its strengths

Various programmes aimed at providing gainful employment opportunities and raising the level of income of the weaker sections had met with limited success. While formulating the IRD Programmes the experiences learnt from the earlier programmes have been drawn heavily.

J. S. Sodhi

THERE ARE APPROXIMATELY 350 million people below the poverty line in the country and around 300 million of them are in the rural areas. These consist largely of small and marginal farmers, agricultural labourers and rural artisans. A review of the various on-going programmes taken up during the late seventies indicated the need for a new comprehensive programme for the development of rural areas. Though a number of programmes have been in operation for the development of the rural poor, significant improvements could not be achieved among the poorest people in rural areas. These programmes did not cover the whole country, though a large number of blocks in the country had more than one of these programmes operating simultaneously in the same area and for the same target groups. This territorial overlap combined with the different funding patterns of these programmes, not only created considerable difficulties in effective monitoring and accounting but also blurred the programme objectives. It was, therefore, proposed that such multiplicity of programmes for rural poor operated though a multiplicity of agencies should be ended and be replaced by one single integrated programme called IRDP, operative throughout the country.

The Programme

The IRD Programme was launched by Government of India in 1978 in 2000 blocks and the coverage was extended in all the 5004 blocks of the country with effect from Oct. 2, 1980. Earlier, programmes such as SFDA, DPAP, CADP NREP, MNP were merged in it. The IRD Programme is now being implemented through a single agency known as DRDA (District Rural Development Agency) at the district level.

Briefly the main characteristics of IRDP are as under :

- It is mainly an economic programme supported by social development programmes such as health, nutrition and education.
- It concentrates on families below the poverty line. The poorest families are identified|selected first for the intensive assistance. 600 such families will be identified|selected per block every year.
- It is not concerned with families which are not potentially viable as they can be helped through welfare schemes like old age pension scheme and not through economic support programme.
- Only economically viable and technically feasible activities based on project reports are promoted in respect of a beneficiary with his/her consultation.
- Subsidy @25% is provided by the Govt. through DRDA and the balance amount will be sought from financial institution as loan.
- Beneficiaries who require skill development are trained. All expenses on training are met by the Government.
- Progress of benefited families is monitored to ensure that they cross the poverty line within a definite time schedule.
- It is based on identification and fuller utilisation of local growth potential through a process of block level planning.
- It envisages development of planning capabilities at block and district levels.
- It is the programme for development of target group beneficiaries in a specified area and thus harmonises both the area and beneficiary approaches.

The operational strategy of IRDP has the following main elements :

- Preparing a resource inventory of block.
- Review of the on-going programmes.
- Conducting a baseline survey with the help of a household schedule.
- Estimation of number of families below poverty line and their annual income both from farm and non-farm sources
- Selection of beneficiaries based on income criteria and priority for schedule castes and tribes.
- Assessment of preferred choice of beneficiaries for avocation.
- Selection of projects keeping in view the local resources and choice of beneficiaries.

- **Preparation of bankable family projects with reference to economic activities.**
- Providing infrastructures which are immediately necessary for programme implementation.
- Ensuring input supply, credit flow, extension and transfer of technology and marketing.
- Ensuring project based implementation and monitoring of family economic activities.

Its strengths

(a) Most of the earlier programmes started by the Government were adhoc in nature. The SFDA, DPAP CAD etc. were time bound a special administrative structures were created for implementing them. These were, therefore, viewed as something of a burden or extrawork by the officials of the development departments and extension officials. Some of the studies had pointed out that the block officials operating at the village level were demanding extra-remuneration for the SFDA work. This, therefore. reduced the effectiveness of the programme. The IRD Programme, on the other hand, aims at integration of the programmes of the development department and, therefore, its acceptance among the officials is granted. In addition to this it is not time bound. In case of the earlier programmes, the staff directly involved in their implementation were either drawn from the other departments on deputation and were on temporary roles of the agencies. The staff on deputation was not taking keen interest since it was known to them that their stay here would be for a short period and their affiliations always were, therefore, with the parent organisation. The IRD Programme takes care of these considerations. Although the same staff which was implementing the SFDA/DPAP is directly involved in its implementation since most of them now know that the programme is here to stay and in all possibility they are going to be associated here for a longer period there is a definite change in the attitude of such officials at the District Rural Development Agency which is implementing the IRD Programme.

(b) Another significant departure from the earlier programmes is that the IRD has effectively combined both the area oriented and the target group approaches. The earlier programmes either had the target group approach (like the SFDA IAD) or were area oriented (like the DPAP). In fact it has combined together the features all of the special programmes which were in operation. It is, for example similar to the SFDA Programme in the sense that the IRD Programme also envisages identification of members of the target group. It is, however, broader in scope in the sense that it is not only confined to the agricultural sector but the industrial and tertiary sectors have also been brought under purview. Similarly the IRD Programme has retained the area oriented approach of the DPAP and strengthened the beneficiary oriented approach. It has been observed that the ingredients that qualify for assistance varied considerably amongst the two programmes and there were also variations in the scale of subsidy. The authorities have, now, seen to it that such variations do not occur under the IRD Programmes in respect of the blocks that have been taken up under the programme.

(c) The IRD Programme attempts to launch for the first time a frontal direct attack on poverty. While the programmes initiated during the early seventies were attempts to help raise the families of the weaker sections, the poorest of the poor were not given the kind of attention it would be deriving from he IRD Programme. The approach under the SFDA Programme was to tap the potentially viable group and in this process the better off sections among the weaker sections of the society, received most of the benefits. The IRD Programme is going to contribute significantly towards an appreciable rise in the standards of living of the weakest sections of the rural society. While, for the procedure of identification all those families below the poverty line would be identified, but for assisting the beneficiaries, the Antodaya approach would be adopted. The Programme would lay emphasis on the need to extend the benefits first to the poorest among the poor.

(d) The approach adopted for operationalising the IRD Programme is very systematic and detailed The authorities have in fact done their homework very well in issuing the guidelines. There are three major broad categories whereby the programmes have been operationalised i.e. (i) Preparation of a Resource Inventory (ii) Preparation of a Household Schedule (iii) Preparation of a Block Plan. It has been specified very clearly as to why we need to prepare an inventory of resources, to what uses it will be put and the items needed for its preparation. The details of the items have been primarily categorised into three broad heads, i.e., Physical and Biological Resources. Human Resources and Infra-Structure and Institutions. Further the Sub-items under each broad head have been listed. This list has been circulated to all the district headquarters.

The Household Schedule has been prepared for identification and preparation of schemes for the economic development of the households below the poverty line It is divided into four parts. Part I deals with the background particulars of the households like their caste, occupation, land owned, etc., Part II deals with the annual income of the members of the household and Part III deals with the summary of the proposed activity to be taken up by the household The details of each part have also been listed.

(e) The guidelines for the preparation of the block plans have also been neatly worked out. The operational strategy for the preparation of the block plan are as follows : (i) Preparation of inventory of local resources (ii) Review of all on-going programmes (iii) The first two steps would lead to the preparation of a perspective sector-wise five year block development and follow the beneficiary for a period of four years to monitor the income generated from the assistance received by the beneficiary. For this purpose the district authorities would have four copies of the each household schedule and the income of the beneficiary would be recorded every year by the block

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Impact of Computerisation on Employment

In an economy which barely manages to provide jobs to a fraction of the skilled workforce added every year while the stock of the unemployed keeps rising by the year, a choice in favour of automation cannot be considered desirable, says the author.

Satish Jha

INDIAN COMPUTER EXPERTS, in a recent symposium on 'computer in Indian economy' is anything to go by, appear to be so overwhelmed by the possibilities of using computers in the Indian Economy in a variety of ways, that they spare no thought for certain other vital aspects. Professor P. V. S. Rao of the Tata Institute of Fundamental Research feels that the question is not whether or when but how to go in for computerisation. Few will question that computerisation will improve efficiency. But there are other critical dimensions to computerisation, the most important of which is its impact on employment. This was totally ignored in the symposium presumably because the participants considered it a settled issue. Unfortunately it is not. It is therefore important to examine this issue in more detail. India is somewhat fortunate in this matter as we can learn the lessons of experience elsewhere before pervasive computerisation makes things irreversible.

The debate on computer's impact on employment is not only alive but becoming increasingly animated in the industrialised economies. The debate revolves around a number of issues such as prospects of extensive unemployment, worker alienation, increasingly centralised economic, political power due to computerisation etc. Many authors have all examined in detail the impact of automation on employment in the US and elsewhere. High technology research centres such as the prestigious Massachusetts Institute of Technology and Carnegie Mellon University have been equally interested in finding answers to the implications of increasing automation even in the US.

Leap frog

In the developing world, particularly in India, the trend has been to view the advancement in electronics and computers as a historically unique opportunity to 'leap frog' into the modern era without having to go through all the intermediary phases that the western economies had to undergo. A dispassionate analysis would suggest that such a view is at best part of general confusion on technology policy itself, which is itself a hotch potch of rhetoric on self reliance, basic needs, appropriate technology on the one hand and an inchoate and confused passion for 'modernisation'. Such a perspective easily overlooks the adverse impact of automation on employment.

The macro impact of computerisation in India may not be identical with that in Western countries. Even in respect of employment. However, by its very nature, automation improves efficiency, lowers cost of production, and implies a "tendency to withdraw as many human elements as possible from production (manufacturing and administration), owing to the unreliability of 'human operating units'". Argues Rada that while the first technological breakthrough related to ensuring survival and the second to multiplying muscle power, automation, the third breakthrough facilitated by computers is concerned with extending the possibilities of applying human intelligence by using more efficient substitutes for some functions of the brain. This is reflected for instance in the case of steel industry where the computer can be used to monitor uniformity of the thickness of rolls with instant feedback and correction or in word processors where productivity gains are achieved by directly cutting down on time for typing, preparation and correction of texts.

Despite this obvious consequences of automation, policy planners continue to be more or less evenly split on the issue of what computerisation does to employment in general. The optimists tend to argue that automation leads to a rise in productivity which is the only way to growth, and which in its turn, increases employment. They point out that the history of industrialisation reveals a steady growth of employment. And that there is no reason why computerisation should reverse this trend. For any loss of jobs will be more than offset by myriad new openings due to rise in productivity and eventual growth.

Adverse impact

The arguments suggesting adverse impact of computerisation on employment, on the other hand, are based on specific studies of automation at unit level as well as their extrapolations for the total employment opportunities. Recently, Robert Ayers and Steve Miller of the Massachussetts Institute of Technology (MIT) argued that in five metal industries in the US alone the potential to displace human labour due to automation is anywhere between one to three million workers-depending on the technology used—out of the current total workforce of 8 millions. Another study at the Carnegie Mellon University found that most entrepreneurs using computerised processes and even its potential users overwhelmingly ranked its impact on reducing labour cost as their main reasons for computerising processes.

In India too two committees have gone into the question of employment effect of computerisation in the past and both have failed to arrive at definite finding. The first study of this kind was undertaken by the works study team appointed by the Maharashtra government to evaluate the impact of office automation. In its report, submitted in 1970, the committee, on the basis of a study it conducted, came to the conclusion that between 1965 and 1969 there was a slight decline in office employment but whether this was due to the introduction of computers was not conclusively proved. Regarding the loss of potential employment too, the Committee could not arrive at any firm conclusion.

Another Committee on Automation appointed by the Government of India, Ministry of Labour submitted its report in 1972 and concluded that computerisation of work had generally led to fall in employment in the affected departments, but this fall had been more than offset by an increase in total employment. The Committee in its recommendations suggested unrestricted use of computers in educational, scientific and research institutions. But with regard to commercial and industrial establishments and consultancy services, it was for some restrictions such as computers being permitted only for certain specific use and in any case only after consultations with the existing workers.

A third and comprehensive study of impact of computers on employment was conducted by Kamata Prasad and Pramod Verma of the Indian Institute of Technology, Kanpur and the Indian Institute of Management, Ahmedabad respectively. They studied 97 organisations using computers and estimated that 253 computers installed until 1975 had created a direct total employment of 8850 persons. What is more, if one were to add persons employed in manufacturing and distributing then the total employment impact was assessed at 12,670 persons. As against this Prasad and Verma estimated that only 8,000 persons were likely to have been displaced as a result of introducing computers. Thus they estimated per computer net job creation at 18.4% i.e. after allowing for displacements. But the study did not estimate the potential loss of employment due to computerisation. The study justified this by arguing that it is as difficult to assess potential loss as it is to assess potential gain.

Five out, one in

But even these figures of additional employment were suggested to be the result of keeping the efficiency of the system low at barely 5 per cent. Besides, the study took a very narrow and restrictive meaning of the word computer. Moreover, since the study was completed in 1977, the very nature of computers has changed. As of now the computing power improves by a factor of 2 every two years. That may change much of the calculations made by Prasad and Verma. Their assessment also needs to be viewed in the light of some comparable western assessments of employment effect of automation. For instance, a UK Government study of 1965 revealed that on an average the installation of computer led to a reduction of 14.5 per cent of jobs existing in the data processing sections in the office before the equipment was installed and that an additional 12.5 per cent jobs would have been created to cope with the increasing work had the computer not been installed. This put the employment displacement in UK in 1965 at 27 per cent of jobs against which only 4.5 per cent new jobs were created. The surveys of the US Labour Bureau also identified similar trends. Studies from Germany also revealed the labour-saving nature of computerisation. And the Government of India Committee on Automation (1972) also quoted a study stating that "in regard to the displacement potential of office automation, it is a conservative estimate that for every five office jobs eliminated, one is created."

Yet, it is often argued that in India the impact of computerisation is unlikely to be as severely felt as in industrialised countries. There is little to corroborate such a line of argument. For one, apart from improving efficiency, a very critical impact of automation is in changing the structure of jobs. Towards this end, not only has the entire training and educational system to be extremely responsive, given the quick obsolesence in this field; the entire economy has to be geared to be able to change as quickly as the employment structure of high technology activities changes. As automation transforms products and the production process in a relatively short span of time, the worker in order to have an occupation for his active life must be quickly able to switch over to newer skills. So far the average age of technology has been large enough to allow the majority of workers to go ahead performing in the area of their skill for about 30 years and more. With major technology changes occurring in the US every seven years on an average and in an even shorter span of time in Japan and West Germany, the old order is already under severe strain. The problem being encountered today in the US in steel and automobile sector are but two glaring examples of this.

Automation, only a glamour

Moreover, in India, automation of production or office management is unlikely to be based on just economic criterion. For, Indian labour is abundantly cheap compared to the rest of the industrialised world, while automation is internationally priced and is made even more expensive by the existing duty structure. For another, the market can by and large be categorised as a seller's market. This makes integrated automation of various functions even more unlikely. Thus the impetus for automation in this country may stem mainly from the desire to avoid the cost of organised labour. Besides, more often than not, automation may be an offshoot of the glamour attached to it rather than genuine need.

There is agreement on the point that computers are more likely to enter mainly the office and information handling sector than any other sector as is the case in the industrialised countries. But as a sectorwise study of impact of computers by Dale and Williamson (The Myth of the Micro) shows, this is precisely the area where employment displacement is most severe. In the US and the UK while the sectoral distribution of workers in information handling; industry, services and agriculture is 40,20,35 and 5 per cent respectively, the projected unemployment rate induced by computerisation is estimated at 26 per cent, 22, 9 and per cent respectively. In India, however, sectoral distribution of employment is markedly different from that in the US and the UK. While there is no seperate classification such as

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The national goitre control programme : a sad story

About 40 million people are suffering from goitre. The National Goitre Control Programme funded by the Union Ministry of Health and Family Welfare has failed to make a significant impact in many areas, says the author. He has urged a qualitative change in the approach to the problems.

C. Gopalan

IT HAS BEEN ESTIMATED that, today about 40 million people in our country are suffering from goitre. A large number of these are cretins, who are mentally and physically retarded. Goitre is not just a 'cosmetic' problem but a disease which impairs health and productivity.

The endemic goitre belt in our country stretches across the entire sub-Himalayan region and includes the State of Jammu and Kashmir, Himachal Pradesh, Punjab (three districts), Haryana (one district), Bihar (nine districts), Uttar Pradesh (14 districts), West Bengal (five districts), Sikkim, Assam, Mizoram, Meghalaya, Tripura, Manipur, Nagaland and Arunachal Pradesh. Endemic goitre has also been identified in the Aurangabad district of Maharashtra and the Shahadol and Siddhi districts of Madhya Pradesh. The prevalence of goitre in these endemic areas ranges from three per cent to 60 per cent with an estimated average prevalence of 30 per cent.

The Programme

The causative factor underlying goitre was identified long ago as iodine deficiency. Prevention and control of goitre, through distribution of iodised salt, is well-known and goitre was totally eradicated from the developed countries several decades ago through the application of this technology. The story in our country unfortunately, has been different.

The National Goitre Control Programme, financed by the Ministry of Health and Family Planning, was launched by the Government of India towards the end of the Second Five Year Plan and had three main components.

Survey of goitre in suspected areas to identify and assess its prevalence.

Production and supply of iodised salt to endemic areas to prevent and control goitre.

Resurvey after five years of continuous supply of iodised salt, to assess the impact of the Programme.

Two goitre survey teams, apppointed by the Health Ministry, carried out initial surveys in almost the entire sub-Himalayan region and in certain areas of the central plateau of the country.

Twelve salt iodisation plants have been set up by the UNICEF since 1959, for the purpose of manufacturing iodised salt to be distributed in the endemic areas with two more being installed, with UNICEF's support, in Gauhati, to serve the needs of the Goalpara and Kamrup districts of Assam and the adjoining state of Meghalaya. The potassium iodate for iodisation is being produced by Hindustan Salts Limited.

The Programme has had a chequered history, Administrative incompetence, lack of coordination between various agencies involved and commercial and vested interests, have apparently combined to wreck the Programme.

The Programme was envisaged to cover only a part of the entire goitre belt. The requirement of iodised salt needed to cover even this area could not be met even to the extent of 50 per cent due to inadequate production and other bottlenecks in the distribution system. Under the circumstances the initial surveys and resurveys have lost their relevance.

The figures, supplied by the Health Ministry, indicate the current state of affairs regarding production of iodised salt (Table 1 overleaf).

Inadequate Facilities

The Health Ministry blames the Salt Commissioner and Hindustan Salts Limited for inadequate production resulting from underutilisation of installed capacity. On the other hand, the Salt Commissioner has proposed the installation of six more iodisation plants.

While the actual production of iodised salt is inadequate, its transportation has suffered because of non-availability of the required number of railway wagons. The present position reads as follows :

"The iodisation units have been facing extreme difficulties in getting the allotment of the required number of railway wagons. The problem of getting covered wagons in the rainy season has not been solved by the railway authorities.

The following factors are considered responsible for the failure of the Programme :

The Programme has not been properly supervised and evaluated at the state level due to absence of goitre cells in the State health directorates of the endemic states/union territories.

The district civil supply authorities have not exercised district control over the salt nominees, resulting in poor supply of gunny bags and poor lifting of iodised salt by these nominees. There has been no coordination between the state health departments and the civil supply departments.

The Prevention of Food Adulteration Act (PFA) has not been enforced by the state health departments, resulting in the entry of non-iodised (common) salt in the endemic areas under the purview of the Programme. Non-enforcement of the Act during a shortage of iodised salt is valid, else there will be an overall scarcity of salt.

There has been unsatisfactory and uncertain help and cooperation extended by the endemic States during surveys in terms of allocation of transport facilities and services of a medical officer to supervise the survey work in the blocks.

Often the ban notification, a prerequisite to the supply of iodised salt, has been unnecessarily held up.

Under the circumstances, the National Goitre Control Programme, in operation for nearly 20 years, has failed to make a significant impact in many areas as revealed by the data (Table 2).

The failure of the National Goitre Control Programme 'highlights the current state of affairs with regard to the implementation of health programmes (including Centrally-sponsored programmes) in the country. Earlier issues of the *NFI Bulletin* had pointed out the unsatisfactory manner in which the Vitamin A Deficiency (nutritional blindness) Prevention Programme was being implemented. Goitre and similar health and nutritional problems are diseases of the poor and underprivileged and, therefore, apparently looked upon as their problem not ours'.

The situation regarding the National Leprosy Control Programme and the Tuberculosis Control Programme has been similar.

Qualitative Change Needed

What is needed is a qualitative change in the approach to these problems. There must be a greater awareness of the importance and urgency of these problems and high priority must be accorded to their control and prevention. A basic prerequisite for national development is the improvement of the quality of human resources.

Better coordination between the central and state health agencies for implementing centrally sponsored health programmes is essential. Separate and specific institutional arrangements must be made for each programme, job responsibilities at different levels clearly delineated, and specific time bound targets laid down.

There must be periodic independent monitoring and evaluation of each programme with achievements and shortcomings audited and highlighted. Responsibilities for lapses, if any, should be fixed ensuring due accountability in the execution of these programmes. There should also be a system of rewards for outstanding achievement and punishment for dereliction of duty respectively.

Unless health, nutrition and welfare programmes are executed in all seriousness, with a sense of urgency and dedication, the present drift will continue.

Impact of the Programme

District/State	Baselone survey year	Prevalence percentage rate	Commencement of salt supply	Resurvey year	Pervalence percentage rate
HIMACHAL PRADESH					
SirWoor	1959	35.8	1963	1980	28.07
Kangra	1956	41.2	1962	1962	32.10
PUNJAB					
Gurdaspur	1961	52.3	1964	1969	42.30
Hoshiarpur	1961	40.3	1964	1969	23.60
Chandigarh	1969	11.2	1968	1977	45.90
BIHAR					
Champaran (East and West)	1960	40.3	1964	1979	64.51 East 57.20 West
WEST BENGAL					
Darjeeling	1965	34.5	1967	1975-76	35.58
UTTAR PRADESH					
Dehra Dun	1965	39.7	1966	1969	16.60
Bijnore	1960	23.2	1960	1969	23.60

Production of Iodised Salt

Total annual requirement of iodised salt	700,000	MT
Total installed capacity of 12 iodisation plants already set up	376,000	MT
Total annual quota fixed for production for use in India	220,000	MT
Production quota in the Sambhar Lake and Khargoda area for supply to Nepal	60,000	MT
Total actual production for both India and Nepal together:		
in 1974-75	122,000	MT
in 1978-79	106,000	MT

(Courtesy : Nutrition Foundation of India)

Integrated approach for a strong farm economy

Virendra Agrawal

It is unfortunate that even after 36 years of Independence and 30 years of planned economic development, the problem of hunger has remained unresolved. Calling for self-reliance in farm output, the author suggests development of an integrated approach for a strong farm economy.

THE WORLD CEREAL PROSPECTS are not too promising. The grain crop prospects in the USSR have made the FAO to revise its estimate-pruned by 15 million tonnes from the earlier estimate of 1605 million tonnes. It seems like a foregone conclusion that the pressure of increased number will bring down the per capita availability of basic cereal below the level obtained in 1981-82. In respect of only one major non-cereal food crop—sugarcane—the forecast about global stocks is somewhat encouraging especially in the light of the serious depletion suffered in both 1970-80 and 1980-81. The UN World Food Council's call for Third World foodgrain reserve of 12 million tonnes deserves particular attention. Another pertinent question is whether the surplus nations will be willing to jack up their food aid amounts beyond the present inelastic limits. The basic reason for the unfavourable flow of food products and the resultant malnutrition and hunger in the Third World is deep-rooted in the present structure of the global economy characterised by maldistribution of markets for both agricultural and industrial products. The current trends in the flow of food products cannot be reversed without a reasonable stability in international price and markets for non-food items and without increasing the Third World share of the global industrial market India may find it difficult to import foodgrains in case our food targets remain unrealised because of serious drought conditions prevailing in certain parts of the country.

Tackling drought situation

The Centre is gearing itself to deal with the draught situation which has affected 186 out of 243 districts in nine states during the last one year. The situation has been described as quite 'serious'. It is unfortunate that after having achieved a record foodgrain production and procurement in 1981-82, the country should be faced with a delayed and weak monsoon this year. The state Governments are continously under watch. They have been advised for timely action to help the farmers to combat adverse weather conditions and to provide the rural population with employment, income, cattle-feed and drinking water wherever the need arises The 12-point programme for draught management which was the basic for combating the draught of 1979 has also been conveyed to the states for action. The banking sector has been directed to assist the farmers in the draught affected areas The success of these commendable measures, however, depend on the ability of the state agricultural departments to utilise the assistance provided to the benefit of farmers. There is some reason for disquiet with regard to the ability of the State governments to follow on through such extension services.

The wayward monsoon last year upset the country's ambitious plan to produce 83 million tonnes of kharif, 4 million tonnes more than the record achieved last year. The areas seriously affected so far are only West Bengal, Bihar and parts of Orissa and Uttar Pradesh. The government is confident that even these areas can grow good crops even if the rainfall now is moderately good. There is a widespread concern that the seeds of coarse grain which were prematurely sown in May 1982 have either failed to sprout or were burnt up by the subsequent heat. The National Seeds Corporation was instructed to supply seeds to areas where the original supply of seed was lost. As for areas with sufficient rain, plans to pump out ground water in large quantities were made. Diesel and electricity were also being diverted to areas which needed such pumping. What was equally important was to save the standing crops as far as possible and help the farmers with new seeds with the arrival of the monsoon in full vigour. In West Bengal, the 'Sus' crop was totally lost and nearly 40 per cent of the seedbeds for 'aman' paddy in 12 districts damaged beyond repair.

Drought of 1979

The drought of 1979 had no serious impact either on the availability or prices of food grains because the government had a buffer stock of 22 million tonnes at its disposal, though the distress caused to the landless laboures and small holders could not be alleviated to any considerable extent as they were thrown out of their work. During 1982 too, the centre had a buffer stock of 41 million tonnes. The government was surely in a position to meet the demand for additional foodgrains by the drought hit states. The Union government promised to do everything possib'e to relieve the distress of the drought hit people who number several millions. Several States including West Bengal complained of irregular supplies of foodgrains which the government has not yet indicated the steps for removing this bottleneck. One of the objectives of this programme must be for creating employment opportunities, and to build up permanent assets to revitalise the rural economy.

Poor Irrigation facilities

It is well-known that in drought prone areas it is only sub-soil water which can sustain agriculture if the monsoon fails. But nothing much seems to have been done in this direction. Even most of the existing tubewells are in a state of disrepair owing to lack of maintenance and the others can hardly be operated because of power shortage. At times we claim that irrigation potential has been so boosted that should meet the total requirements of agriculture but the fact remains that a substantial agriculture still depends on monsoon. According to governments' own estimates 113 million hectares constitute the total irrigable area in India over the 50 years, down to the end of 1980-81 the irrigation potential developed has been 50 million hectares. The annual addition to irrigated area has been around 1.23 million hectares over the last three decades. If the government is keen to resolve the crisis then the possibilities need to be further explored for suspension of realisation of irrigation tax and for lowering of prices of fertilisers and rationed articles in rural areas. The co-operative banks can also suspend realisation of their loans to the farmers.

The country is passing through the familiar five years cycle of monsoon. The real default in meeting the contingency lies in the large shortfall in procurement of foodgrains and extension of irrigation during the last two years. Since the present government did not take advantage of the bumper harvests in the last 2 years, the buffer stock has shrunk to 15 million tonnes while the public system has been run down and the 'food for work' programme nearly scuttled. The foreign exchange reserves have also slumped down to less than Rs. 3500 crore which are hardly adequate to finance the import of foodgrains and other wage goods to the required extent and provide some protection against another spurt to inflationary pressures which are sure to get generated in the event of set back to the kharif crop. This time the problem will not be merely galloping prices of farm output but the crucial question will be that of availability of foodgrains. The State governments had stocks which should be adequate till October 1982. The government has already raised the wheat price by 15 paise a kg at fair price shops. The revised issue price of wheat will now be Rs. 160 a quintal for public distribution and Rs. 185 a quintal for roller mills. The portents are thus bad all round. The question is whether the government with its preferred policy prescriptions and management capability is willing and able to cope with the situation without piling up too much misery immediately on the mass of the people and long term damage to the economy. There are serious doubts on this score.

Inadequacy of foodgrains buffer has to be overcome not so much by imports as vigorous procurement of domestic production. Two tier pricing may have to be devised for this purpose. This is the worst draught in our living memory, therefore, the government has no alternative but to meet the situation entirely on war footing. The overall of the government machinery is the pre-requisite for handling the situation at the national level. It is high time to review soft options while making strenuous efforts for stepping up our production capacities all over the country. Similar regulation of available infrastructural facilities will be necessary even as they are further strengthened and developed. A critical food situation is sure to present such hard times that the government will have to be on its toes. The crucial question is how the government decides to resolve the food crisis in a satisfactory way. The plan to export food grains must be abandoned immediately because we do not have adequate quantity required for feeding our growing population.

Plight of Peasants

The agricultural development strategies in many Third World countries to increase farm production have left untouched millions of small peasants and even more so the landless labourers. In many places their plight has become worse because, with the rise in land value large number of share croppers and tenants have been evicted. In India, there is statistical evidence to show that the real wages of farm labourers are declining. Thus for all the increase in food grain production or their prices, millions of poor families just do not have the purchasing power to meet their needs. In a drought situation, the food target of 14.5 million tonnes can hardly be expected to be achieved. The ambitious agricultural strategy which consists of four plans; larger area under the high yielding varieties, extensive use of fertilisers, more meaningful distribution of certified seeds and a step up in loans to farmers can surely help in improving the economic lot of the poor farmers, if it could be worked rather effectively. Most of the States have set ambitious targets but adverse weather conditions have slowed down the pace of operations in states like Punjab, Haryana and Gujarat.

It is believed that the rice and wheat crops can be normal with the strengthening of monsoon, it is a different story in pulses and oilseeds. Unless there is a technological breakthrough in the production of oilseeds and pulses, no substantial improvement can be brought about in these areas. Nearly 300 million people in the country live below the poverty line. It is unfortunate that even after 36 years of Independence and 30 years of planned economic development, the problem of hunger has remained unresolved. Self reliance in farm output is still a far cry and will remain so till we do not develop an integrated approach for a strong farm economy. ☐

Unique Bio-gas plant

HIGHLAND farm is a poultry farm in Khot Khoti, a place about 5 Km. from Dimapur. It is situated in Karbi Anglong district of Assam. The management of the farm recently started constructing a bio-gas plant to be run by poultry droppings of one cage containing nearly 1,500 birds. The gas will be mainly utilised for providing warmth to chicks during winter and to maintain temperature in egg storage. In all there are 7,000 birds in the farm and management intends to go in for a community bio-gas plant in future. The outgoing slurry will be utilised as fertilizer for sugarcane crops grown by the farm which supplies sugarcane to Dimapur Sugar Mill. Although the farm is situated in Assam, technical help for bio-gas plant was rendered by the KVIC's State Office, Dimapur.

(Courtesy : Jagriti).

Trends in India's engineering exports : A bright future

International agencies like the UNIDO and IBTD are showing interest in tie-ups with the Indian engineering consultancy services for development programmes in the third world nations.

R. C. Bhatnagar and Dr. R. S. Shukla

Apart from the faster rate of growth in exports in terms of both volume and value, what distinguishes the seventh decade of this century from the earlier period is the growing diversification of export trade. Besides the rapid strides that we have made in the case of traditional items, it is significant that the share of non-traditional items has taken an upward swing. One notable item which instantly attracts our attention is the export of engineering goods, which have registered a significant rise during the preceding decade. This is indeed very reassuring because engineering goods were the largest foreign exchange earners by late seventies and had a share of 11 per cent in our total exports.

At the beginning of the last decade (1970-71), the total exports of engineering goods from India were to the tune of only Rs. 115 crores but their value in absolute terms has gone up to Rs. 900 crores in 1980-81. Their share in the country's total exports was a mere 7 per cent and although the total volume of export trade has become four times more than it was in 1970-71 the share of engineering goods has risen to 15 per cent of the total exports in 1980-81.

Since the percentage share of India in world engineering exports still continues to be negligible at almost less than 0.25 per cent, there is adequate reason to hopefully look forward and reorganise our engineering exports in such a way that we become a power to reckon with both in terms of technology and efficiency. It is in this context that a review of engineering exports becomes imperative and significant.

Composition

Turning to commodity-wise export trends of Indian engineering goods, it is observed that far reaching progress has been made in different sectors. The major items exported from India include machine tools, combustion engines, electrical machinery, industrial plants, light agricultural equipment fabricated steel structures, wagons coastal vessels, commercial vehicles. It is significant that with increasing sophistication industrial and sanitary castings and forgings, bicycles and their components, industrial fastners and mild steel wire products are finding ready acceptance in most technologically advanced countries like U.S.A. and Canada.

Significantly, not only do India's export goods cover a vide and comprehensive range but also its area of operation today virtually encircles the globe. Apart from south-East and West Asia, India is also beginning to make her presence felt in the developed countries like Australia, New Zealand Europe and America. Prior to 1970-71, 74 per cent of India's total exports of engineering goods went to South East Asian, West Asian and African countries. Their demand for Indian goods, however, is not confined to most up-to-date. Sophisticated products after elementary industrialisation of their own economies but India has achieved an appreciable increase in her export of engineering products to both European and American countries during the past two decades and the share of these countries in India's total engineering exports has gone up from 9.3 per cent in 1960-61 to 28 per cent in 1980-81.

Joint Ventures

Another important development in the field of our exports during the last decade has been the providing of consultancy services and setting up of joint ventures abroad. These joint ventures include construction of bridges, dams, roads, thermal stations electrification projects, erection of refrigeration plants, laying of railways, setting up sugar and textile mills etc. Consultancy services by Indian firms have been provided for setting up fertilizer plants. Paper Mills, chemicals and nuclear power plants.

Global opportunities for India's engineering equipment, goods and services are expanding; new avenues are opening up. In this context, it would be interesting to have an idea of the projected export targets of India's engineering goods for the eighties prepared by the Engineering Export Promotion Council of India.

	Performance Targets
Year	**(Rs. Crores)**
1874-85	2,440
1987-88	4,770
1990-91	9,310

It is noteworthy that even if India were to achieve the projected targets, it would be able to increase its present share of about 0.25 per cent in total world exports to the extent of 0.85 per cent by 1990-91.

Measures taken by India

In view of the big development plans and high projected target fixed for eighties India has taken the following measures to accelerate the pace of its exports with other countries.

1. Exchange of trade delegations with a view to gaining first-hand knowledge about market potentials and also acquainting the foreign buyers with India's industrial capabilities.
2. Participation in International exhibitions and fairs by the Export Promotion Council.
3. Effort have been made to improve shipping facilities and providing more frequent air-services with the countries of the gulf-region.
4. Apart from the top-producers getting all necessary financial help and essential inputs from the government effort are being made to encourage small and medium producers to enter the export market.
5. Turn-key projects and joint ventures have to play a vital role in times to come. The establishment of Export-Import Bank in September 1981 is a step in the right direction as it will cater exclusively to the needs of our export trade.
6. Indian exports to West-Asian countries are being given a prompt attention and rationalised diversification.
7. Effective Steps are being taken to utilise the installed capacity of relevant export oriented industries. So that the demand for Indian Engineering goods can be met squarely. The Indian firms must also ensure the acquisition of latest technology to keep themselves in the international market—wherever possible joint tendering and consortium contracts are being encouraged.

In the end, we must remember that the highly, sophisticated technologies developed by the advanced countries are not appropriate for the development needs of the developing countries. India's intermediary technology has attracted the neighbouring countries; India consultancy and technical services are gaining popularity not only in the developing countries but also in some of the developed countries. Even international bodies like UNIDO and IBRD are showing interest in the tie-ups with the Indian engineering consultancy services for development programmes in the third world nations. We have, therefore, not only to keep out goods and services cheap, but also first rate.

The exporters on their part must ensure that the prices having been settled, the normal delivery schedules are strictly adhered to. The supplies are regular and as per original sample. Adequate attention is paid to packing and aesthetic appeal of the commodity and efficient after sale services are ensured. All enquiries from buyers are promptly attended to and cordial business relations maintained. Having developed this basic business ethos, there is reason to believe that we have a very bright future in the export of engineering goods and that sky is the limit for us.

Planning Commission sets up working group on KVI

The Planning Commission has set up a 22-Member Working Group on Khadi and Village Industries (KVI) with Shri S. B. Jain, Addl. Secretary, Department of Industrial Development, as the Chairman and Shri S. B. Goel, Deputy Secretary, Ministry of Industry as the Member-Secretary.

The group has been set up to critically appraise the policies, programmes and achievements in the Khadi & Village Industries sector and also production and employment generated (both direct and indirect) during the Sixth Plan period against the target set.

Protection of eggs of rare bird Lesser Florican

All those providing information and protection to the rare bird Lesser Florican (Kharmore) and the eggs laid by the female will be given awards of Rs. 250.

The Madhya Pradesh Government have launched a special campaign for the protection of the female Lesser Florican and its eggs during this laying season. The Lesser Florican is presently in grave danger of extinction. This rare bird is found in the vicinity of Dhar, Sardarpur, Ratlam, Salilana and Mandsaur.

Killing of the this bird is an offence under the Wild Life Protection Act and punishable with imprisonment upto six years and a fine of Rs. 500.

Drug production

The value of bulk drugs and formulations produced during the years 1981-82 and 1982-83 is as follows:- 1981-82 Bulk Drugs—Rs. 289 crores, Formulations Rs. 1,430 crores. 1982-83 (estimated) Bulk Drugs—Rs. 325 crores, Formulations Rs. 1,545 crores.

The annual plan targets for the year 1983-84 are Bulk Drugs Rs. 400 crores and Formulations Rs. 1,650 crores. The value of imports and exports of bulk drugs and formulations for the years 1981-82 and 1982-83 is as follows : 1981-82 Imports Rs. 107 crores and Exports Rs. 95 crores and 1982-83 Rs. 121 crores and Rs. 111 crores respectively.

T.V. Expansion in Future in Colour

All the new TV centres would be implemented for operation in colour.

During the remainder of the Sixth Plan period, it is proposed to install high power transmitters at 26 places and low power transmitters at 118 different locations. After the implementation of this plan, there will be 180 transmitters in the country providing coverage to 70 per cent of the country's population.

Indian joint ventures abroad

India's objective in encouraging and providing Joint enterprises reflects on its overall strategy to participate increasingly in the developmental efforts of the third world countries. There were 228 effective joint venture proposals at the end of the financial year 1982-83. There have been benefits from such ventures in the form of bonus shares, dividends, know-how fees, and additional exports.

AT THE END OF MARCH 31, 1983, there were 228 effective joint venture proposals, out of which 140 joint ventures were in production or operation and 88 proposals were under various stages of implementation.

India's objective in encouraging and promoting joint enterprises reflects on its overall strategy to participate increasingly in the developmental efforts of the third world countries. Indian enterprises abroad, act as catalysts for export promotion by projecting India's capacity to supply a wide range of capital goods and technical expertise. They also serve as outlets for Indian enterprises to internationalise and in the process expose themselves to the latest technological developments, management practices, materials management, etc., prevalent abroad.

Over the past three decades in the wake of planned economic development of the country there has not only been a steady growth in industrial production but also substantial diversification of the industrial base, making India one of the few developing countries capable of supplying a wide spectrum of capital goods. This process has also led to the emergence of a number of Indian companies possessing the capacity and competence to undertake new industrial ventures in the developing countries of Asia and Africa.

The scheme of promoting joint ventures has been formulated keeping in view the level of technological competence achieved by the country. As substantial transfer of capital from India has not been found to be feasible, the emphasis has been to promote the exports of capital goods and technology through the joint ventures. However, export of capital to a limited extent has been permitted taking into consideration the need and merit of each case.

Pattern of Investment

Indian investment by way of equity share capital in the 140 joint ventures which are currently reported to be in operation, has been effected mainly through export of capital equipment and technology, cash remittance playing only a supporting role. In the case of joint venture proposals under implementation, the higher quantum of cash remittance has been mainly on account of three joint ventures which together had been permitted to remit Rs. 23.4 crores for investment in equity. These proposals are the Indo-Senegal joint venture, in which the Government of India along with Indian Farmers Fertilizer Cooperative Limited (IFFCO) and Southern Petro Chemical Industries Corporation Limited are collaborating with the Government of Senegal for the manufacture of phosphatic fertilizers and phosphoric acid—Rs. 17 crores, the proposal of State Bank of India to set up a Joint venture merchant bank in Nigeria—Rs. 2.8 crores and a proposal of State Bank of India to set up a joint venture bank in Sudan—Rs. 3.6 crores.

Size of Indian Joint Ventures

One significant feature of Indian joint ventures that has had a vital bearing on their performance and operating results, is the small size and scale of operations of the majority of units engaged in manufacturing activities. But this trend towards the establishment of sub-optimal units (at least in the manufacturing sector), is gradually being reversed as far as the units which have been coming on stream during the last one or two years are concerned, and also in the case of units which are in the process of being implemented. This orientation has been to a large measure aided by the entry of competent Indian companies both from the private and public sectors who have started embarking upon well-conceived, carefully planned and economically viable projects, capable of yielding not only higher returns, but also of projecting a better image of Indian expertise. A number of companies belonging to the public sector have also come forward to set up joint ventures in diverse fields such as machine tools, engineering contracts, consultancy services, fertilizers, tea-blending, hotel, etc. While among the units in operation, there are only two joint ventures promoted by public sector organisations, their number has increased to 12 in respect of units under implementation.

In the recent past, however, there has been some cooling off in the interest shown by large companies, amidst reports of recessionary conditions prevailing in almost all countries of the world.

Regional Orientation

Indian joint ventures currently in operation are dispersed over 27 countries. A little over 80 per cent of them are concentrated in 10 countries, namely:

Malaysia (27), Singapore (16), Indonesia (13), USA (10), U.A.E. and Kenya (9 each), Thailand and U.K. (8 each), Sri Lanka and Nigeria (7 each). The other countries where Indian joint ventures are in operation are Mauritius (4), Saudi Arabia and West Germany (3 each), Philippines and Hong Kong (2 each), Nepal, Bangladesh, Oman, Kuwait, Bahrain, Australia, Fiji, Tonga, Uganda, Botswana, France and Netherlands (one each). Judging by the number of proposals received during the last two years, it would appear that interest has been waning in respect of countries like Malaysia, Mauritius and Philippines. On the other hand, keener interest is being evinced by Indian entrepreneurs for locating joint ventures in Sri Lanka, Nigeria and Singapore.

Region-wise, the largest number of Indian joint ventures are located in the neighbouring countries of South and South East Asia (77) followed by Africa (22). In terms of investment also, this region is much ahead of others, although a shift in the share of investment mainly in favour of Africa is discernible in the case of units in the process of implementation.

Field of Collaboration

Out of the total of 140 joint ventures in operation, 93 or 66 per cent were engaged in manufacturing activities but they accounted for about 95 per cent of the total Indian investment by way of equity share capital. Among the joint ventures that have become operational in the manufacturing sector, the maximum number were in the field of light engineering followed by textiles, the traditional fields in which Indian entrepreneurs have acquired certain degrees of capability to compete in international markets. Other industries in which Indian joint ventures have been set up include chemicals and pharmaceuticals, palm oil refining, iron and steel products, paper, glass, etc. In the non-manufacturing sector, the largest number were for trading and marketing followed by hotels and restaurants.

Among the proposals under implementation, there is a larger proportion of non-manufacturing units (50.5 per cent) than in the case of units already established (34 per cent). The new fields in which joint ventures are being established include tea blending and packaging, tea auction centre, book publishing and distribution, real estate development, bore piling and water well drilling, travel and tours, computer data processing, financial consultancy, etc. With the setting up of the Indo-Senegal joint venture, in which the concept of buy-back arrangement has been given a concrete shape for the first time, India would be assured of a regular supply of 110,000 tonnes (in terms of P_2O_5) of phosphoric acid per annum for a period of 15 years from 1984-85 when the project is likely to be commissioned.

Benefits from Joint Ventures

Some of the successful joint ventures operating abroad, have declared bonus shares from time to time and the prorata allotment to the Indian promoters has exceeded Rs. 10 crores which has been taken into account while computing the total Indian equity. The receipt of bonus shares has enlarged the Indian investment by about 20 per cent and also enhanced the capacity of these units to remit larger amounts by way of dividends in future. The other benefits that have accrued to the country by the establishment of joint ventures over the years are in the form of dividends, know-how fees, etc. and additional exports. ☐

(Continued from page 16)

extension officials. In addition to this, a Monitoring-cum-Identity Card has been printed. The beneficiary will have one copy of the Card. In addition to this one copy of each of the Card will be maintained at the block, project level and with the financing institution.

(f) The Programme has laid emphasis on training and detailed guidelines have been issued for holding the block level seminars. The seminar objectives, its duration, the issues to be discussed and the training methodology have been clearly spelt out.

The Government of India had formulated and implemented various programmes for providing gainful employment opportunities and raising the level of income of the weaker sections of the population in rural areas. Most of these programmes had been time bound and ad hoc in nature with the result that these had met with limited successes. While formulating the IRD Programme the authorities have drawn heavily on the experiences learning from the earlier programmes. It is hoped that the programme would be implemented in the spirit in which it has been formulated so that it is able to meet its objectives. ☐

(Continued from page 18)

information handling in the country, the other comparable sectors employ 9, 18 and 73 per cent of working population respectively. But the service sector mainly comprises the informal sector, which is simply out of the reach of the computerisation process. In the event, automation induced unemployment, according to Vandana Shiva of the IIM, Bangalore, even if one assumes the trends in the US and Europe to hold good in the Indian case as well, may not exceed 5 per cent. That will be the case only if automation gathers the same momentum here as in the industrialised countries. But, however small the impact of computerisation on employment, in an economy which barely manages to provide jobs to a fraction of the skilled work force added every year while the stock of the unemployed keeps rising by the year, a choice in unemployed keeps rising by the year, a choice in favoui of automation cannot be considered desirable. ☐

Industrial Relations

According to information received in the Labour Bureau, the number of strikes and lockouts during the year 1980 were 2856, in 1981 were 2589 and in 1982 were 2444.

The Government was keeping a constant watch on the industrial relations situation in the country. Steps were being taken to set up additional Regional Offices and prescribing norms to step up the disposal of cases. The estimated loss in production due to strikes and lockouts was Rs. 297.14 crores in 1980. Rs. 628.76 crores in 1981 and Rs. 243.91 crores in 1982. ☐

Farm economy in tribal areas
A case study of Bastar district

This case study of Bastar district reveals that primitive type of agricultural cultivation prevails. The expenditure on HYV seeds, fertilizers and pesticides is nominal i.e. 0.4 *per cent of the total cost of production, the labour engaged during the cropping season is mostly family labour.*

Rajagopal

The tribal economy is the specimen of the neglected sector in the post-independence period. Conceptually, notion of backwardness of an area is associated with relatively low level of per-capita product in the area as compared to average per-capita product in general economy. Bastar is the most backward district in the State of Madhya Pradesh as well as in the country. It is studded with a population 18,40,449 in the 39,114 square kilometre geographical area. The density of population in the district is 47 persons per square kilometre.

Agriculture is the main-stay of the population of the district which is evident from the fact that around 70 per cent of the reported area is under agricultural use and more or less 65 per cent of the total working force is engaged in it. Despite this concentration in agriculture and of the fact that about 95.33 per cent of the cultivated area is under staple cereals, the district is still under deficit and unprofitable farm economy.

This paper makes an attempt to examine the existing farming pattern and its economic viability. For the purpose of the study the holdings of marginal and small farmers are selected which possess very low yielding potentiality. These holdings are not economically viable as well as technically feasible and comprise 41 per cent of the total holdings in the district. The second part analyses the principal cases of low productivity and its viscious circle in farm economy. Further, the paper suggests new approaches for the agricultural development.

Methodology:—To study the above objectives, sample farmers were selected from all over the district and study was conducted through a purposeful and short questionnaire. A group of five farmers comprising two marginal farmers, two small farmers and a big, farmer, were sampled from 24 villages in the eight tahsils of the district. The sampling was made on Probability Proportion Sampling (PPS) method. The results have been put under different heads in the paper after analysing the data.

Land use:—By and large the cultivable land holdings are situated on the plateau and hill slopes. The quality of the soil is acidic and medium. According to the Geological Survey of India, the area of the district is 3906000 hectares, of which 24, 15, 874 hectares is reported in the village papers maintained by the Land Records Department. As per land utilisation statistics only 61.32 per cent of the total geographical area is under cultivation. The area under forest is 982289 hectares, which constitutes 25.09 per cent of the total area. The percentage of the fallow land and waste land is 4.60 and 5.41 respectively to the total area. The land under pastures is 3.58 per cent to the total area in the district.

The average size of holdings comes to 5.93 hectares as compared to the 4.0 hectares of Madhya Pradesh. The percentage of marginal, small and large size holdings is 22.6, 35.5 and 41.9 respectively on an average. It was observed that most of the holdings of marginal and small size are uneconomical and also are no technically feasible.

Cropping Pattern.—In the district practically all the cultivable area is utilised for kharif crop which occupied 775 thousand hectares in the year 1980-81. This district is primarily a food crop growing district. 93 per cent of its gross cropped area is under food crops. Of these, paddy is the principal crop sown on 90.40 thousand hectares. In other words 60.7 per cent of the gross sown area is under paddy cultivation. The corresponding percentage for Madhya Pradesh and India is 21.5 per cent and 23.40 per cent respectively on an average. The intensity of cropping is 104.0 as compared to 114.0 of the State. In the year 1980-81 the cash crops were sown on 4.55 per cent and minor millets sown on 43.53 per cent area of the total area under cultivation.

Irrigation Potential.—Irrigation facilities in the district are very limited and insignificant. According to the Land records statistics, the kharif and rabi crops occupied 775 thousand and 17 thousand hectares during 1980-81 and the total cropped area has got 1.2 per cent (10,539 hectares) benefit by irrigation. The principle source of irrigation in the district is tanks which provided irrigation to about 55 per cent of the total irrigated area.

Production Trend.—The paddy crop fetched the highest yield of 18.77 quintals per hectare. The data collected on the production trend of the paddy shows that the average production since 1973-74 and 1979-80 was 8.48 quintals per hectare. The average production of maize, jowar and wheat is 12.03 quintals, 8.02 quintals and 8.18 quintals per hectare respectively. The production of oil seeds is decreasing on an average. Mustard and castor are the principal oil seed crops which fetch 3.69 quintals and 1.64 quintals yield per hectare respectively.

Cost of Production.—The data collected has revealed the premitive type of agricultural cultivation, in the district. The investment made on the principal inputs is nominal. The expenditure on HYV seeds, fertilizers and pesticides is only 0.4 per cent of the total cost of production. The labour engaged during the cropping season was mostly family labour. On analysing, the cost of family labour per season comes to Rs. 450 on an average. During the study it was found that on an average 3 members of a family were on work for 30 days in a season. The cost of agricultural labour is Rs. 5 per day during 1981-82 in the district. It was observed that the marginal and small farmers borrowed the seeds from the big farmers on an agreement to be repayed on double the quantity. The tribals of the district spent 34 per cent of the total amount in religious and social activities like worshipping the land deity, feast on harvest of the new crop and the like.

Trade Practice.—The survey of the sample families showed that 10 per cent of the disposal of paddy was made for cash and 15 per cent was made on barter in the weekly markets for essential commodities. Majority of the marginal and small farmers sell their produce in their own village at the available price to the petty traders. The medium and big size farmers sell their produce in the cooperative marketing societies. The study observed that by and large 65 per cent of the paddy was marketed after the harvesting was over. The price of paddy tends to rise between February and May but 73 per cent of the surplus was disposed off in November-December at the 10 per cent lower price. The villagers do not get adequate surplus to keep the produce in godowns and sell it in profit at time of high price. The warehouse facility is practically insignificant in the district. The existing warehousing facility serves only 15 per cent of the peasant population in the district.

Conclusion and Policy Suggestion

The study reveals that it is the group of marginal and small farmers, that constitutes the bulk of the peasants population. The majority of farmers of this group have uneconomic holdings.

The majority of the farmers are still sticking to traditional cultivation methods. 96 6 per cent of the total cultivable area is monocropped in this paddy growing district. The production of cash crops is limited but minor millets are the staple food crop for the villagers in the district, because the production of paddy is not sufficient for domestic consumption. The capital investment on land and intensive cropping is very poor, and thus the production per hectare is also not economically viable. Irrigation facilities are not adequate.

Agricultural marketing is not well developed despite regulated market in the district. 60 per cent of the marginal and small farmers sell their produce in the village only at low price to meet their immediate needs. A higher percentage of the marketable surplus is bartered for essential commodities with their own castemen or petty traders in the weekly markets. The storage facilities are not sufficient in the district to serve the needs of the farmers. The group of marginal and small farmers are exploited in the markets.

To increase the production potentiality, the existing agricultural practices have to be reformed and better strategy for the agricultural development in the tribal areas is to be drawn. The paper suggests few policy strategies to be taken under consideration, while planning for agricultural development in the tribal Bastar district:

1. Since the tribals are not aware of the modern technology in agriculture, an institutional effort should be made to replace the traditional set backs which are the principal causes for low productivity. The agriculture department has to set up a forum for 'collective farming' in the tribal fields.

2. The 'collective farming' has be experimented in small clusters of villages with 10 farmers in an unit. The cultivation should be done under the direction of 'farm-specialists' of agriculture department. This strategy will give practical training to the tribal farmers as well post them with the benefits of better farming. These efforts will also increase the per capita production.

3. Agro service centres should be started in each block to assist the farmers in every walk of farming. The centres have to be well equipped with agricultural implements and the pesticides.

4. "Mixed cropping" should be introduced in kharif season to compensate the low production of paddy. The irrigation facilities are limited, so less water consuming crop breeds should be experimented in mixed cropping.

5. The number of regulated markets is to be increased as their present number is unable to cater the needs of more than 68 per cent of the farmers. Each growth centre should have a regulated market and each block should have a krishi upaj Mandi. There are only 8 krishi upaj mandies existing in the district.

6. The number and capacity of irrigation tanks should be increased. ☐

Twenty-Point Programme

(Continued from page 11).

such programmes. This time it has been decided that the implemenation of the programme will be done by the government organisation at block, district and commissionary level, this strategy should prove more effective since the government machinery has control over the resources. Of course, committees at state, district and block levels may cooperate with the authorities. Thus, we can hope that the programme would be successful in achieving its objectives. But the ultimate success of programme would be possible only when local people take interest and extend their co-operation. As our country has a wide diversity it also has various problems. Therefore priorities of the programmes are to be changed according to the needs of different areas. Thus, it is suggested that the programme should be flexible enough to be able to adjust local priorities.

A Tanda where a nomadic tribe's wanderlust ends

B. K. Hegde

LAMBANIS are a colourful tribe of nomads dotting the landscape in the northern tracts of Karnataka. These gypsies are bitten by wanderlust as they would never settle down in one place for long for anything. Traditionally, they used to live over the centuries by petty thievery. Occasionally they also work as agricultural labourers. Their women wear colourful costumes consisting of a two-piece outfit : a multi-coloured and yellow-dominated ghagra dotted with interwoven pieces of mirror and beads of several shapes and dimensions and a dark-coloured long-armed choli, equally embedded with pieces of mirror and beads.

Lambanis shy away from people, which may perhaps explain why they have managed to remain wilfully isolated from civilisation and progress for centuries.

Not so the Lambanis living in a Tanda on the outskirts of Santpur, 30 kms. from Bidar. You can never spot the cluster of some twenty Lambani cottages as you pass through unless you take the trouble of making a detour of about three kms. literally on foot as the pathway is rocky and unmotorable. The Lambanis usually live in places hidden away from the mainstream of society more for reasons of social non-acceptance than for preservation of their cultural identity. Who would accept a wandering tribe dreaded for centuries for thievery ?

Manik, the octogenerian Lambani Chieftain of the Santpur Tanda spoke candidly on their way of life, past and present. He has four sons and three daughters who all live with him. He heads a clan consisting of about 150 Lambani men, women and children, living in 20 cottages built very close to one another in the Tanda. He grows jowar on five acres, raises two milch animals and also rears a few sheep. He owns one among the three bullock-carts in his Tanda, a luxury item highly useful for transportation of produce to the Santpur market.

As you enter the Tanda, you find a borewell fitted with hand-pump and as you press it, crystal cool water gushes out of the pipe—the first harbinger of prosperity for a forgotten tribe. The borewell, the chieftain explained, was a gift to their people under a Centrally-financed Rural Water Supply Scheme

The million-rupee question was why and how the Lambanis, who are never known to settle down in one place, have literally settled down here in this Tanda for nearly a decade now. The answer came from chieftain Manik and his tribesmen in an encore They pointed out gleefully and gratefully at the men of the Santpur branch of State Bank of India and said. "These friends made us stick to the soil here !". And what did they do ? "They gave us money to buy milch animals. They also helped us to build our cottages. They encouraged us to buy fertilisers to enable us to grow better jowar. They helped us in reclaiming cultivable land. They guided us to plant coconut trees", the chieftain was saying.

It was mid-day and the buffaloes had come for water. The goats were roaming all around and bullock-carts lay idle as if for seista.

You could see that every cottage had in front of it two silos made of bamboo for storing jowar. And all the twenty cottages had tiled roofings ! "We have built these cottages ourselves". Manik was proudly saying.

You could also notice the children of the Lambanis spilling all over the Tanda. Do they go to school ? No, none of them. Schooling still remains a luxury for the Lambanis, for they have to make a long trek on foot, extending more than 10 kms to reach the nearest primary school. They say, they just cannot make it. Yet, the chieftain of the tribe has managed to educate one of his sons upto pre-university level and the boy is now eagerly waiting for a white-collar job.

The Turning Point

The Lambani Tanda is one of the many difficult villages spotted by the State Bank of India. As part of the activities connected with the New 20-Point Programme for raising the income and standard of living of the weaker sections of society, the Santpur Agricultural Development Branch of SBI has adopted 82 villages in the most backward areas of the drought-prone Bidar district. It has helped hundreds of people cross the poverty line by financing the purchase of camels and donkeys for transportation of produce. It has helped the weaker sections to convert large tracts of barren lands into smiling green landscape. It has also financed both dug-well and lift-irrigation schemes. You could spot a large number of lift-irrigation pumps along the banks of Manjra river. Villages like Bachepalli, Ladha, Koutha and Nidoda where only dry crops were grown for ages have taken up wet farming. As many as 167 wells have been dug with the help from SBI in Korehal, Chanduri. Korekal and Sundal villages alone. As many as 12 tractors were purchased by farmers with Bank assistance.

The Bank officials asserted that those poor people who have been helped to cross the poverty line, particularly the Lambanis, have been consistently honest and faithful in repaying their loans. Trust has begot trust, and a little more—love for the agents of change. Now, the Lambanis of the Tanda, you can bet, will never think of unpitching their tents, for they are no more living in tents. Their gypsy way of life is over □

Iffco helps Ludas leap ahead

Dinesh Kumar

TO REACH LUDAS, a village adopted by IFFCO, one has to meander through the picturesque Haryana Agricultural University where tall trees, students' farms and orchards provide an aesthetic delight to the viewers. At the village lush green wheat tillers and yellow mustard crops fluttering in a cool breeze of a bright Sunday morning gladdened our hearts to a considerable extent. It was rather a welcome change from the monootnous and humdrum city life. How could IFFCO bring about an all-round economic and social development in this village in such a short span of five years is unimaginable. The farmers are in the real sense, happy over IFFCO the entry of which has brought prosperity to their homes.

Situated on Hissar-Shahpur road, about one kilometre from Hissar, Ludas which has a population of 190 families comprising 1540 members spans an area of over 625 hectares out of which 579 hectares of land is cultivable, irrigated by canals and tubewells. Five years ago there were just 135 farming families. 43 families own land exceeding 5 hectares while the number of families possessing land ranging from one to five hectares, fluctuate between 25 and 35

Adopting a village

The idea of adopting this economically backward village struck to Shri P. D. Lohchab, the then Field Officer stationed at Hissar. One baffling aspect which Shri Lohchab noticed was that the village was plagued by poverty and socio-economic ills, despite being located near Haryana Agricultural University. He rightly capitalised on this by frequently meeting the farmers individually and collectively and studied their problems in depth. Then he contacted officials of agriculture and cooperation departments and Haryana Agricultural University scientists and successfully effected the transfer of agricultural technology to the farmers' fields. Farmers, who were conservative in nature, were apprised of the use of balanced fertilisers and high yielding varieties. On my recent visit to the village I found the farmers to be more progressive, conscientious and enterprising.

To generate confidence and faith in farmers, IFFCO's field staff laid out demonstrations on wheat and cotton crops to show the distinct difference in yield Before advocating the use of NPK, 240 soil samples were collected and sent to HAU laboratory for analysis. After obtaining the results, cropwise recommendations were made on the use of correct dosage of fertilisers. To make the cotton crop, which happens to be a major Kharif crop, disease-free, the farming community was demonstrated on the right technique of applying insecticides and pesticides in correct proportion. Similarly, acid delinting in cotton and Vitavax application in wheat were also taken up as part of seed treatment campaigns.

The Government is initiating drastic steps to preserve flora and fauna by undertaking crash programmes in afforestation and reforestation. Hence there exists ample scope for tree plantation in this village. Within five years the spectacle of village has undergone a sea change. In 1977 there was just one tractor and one tubewell which have risen up to 12 and 10 respectively. Majority of the tubewells have been installed by the farmers with their own money while loans have been advanced for the purchase of tractors by Punjab National Bank, Union Bank of India, State Bank of India etc. During the period the yield kg|hectare has almost doubled in all crops. For instance, a hectare of land at present produces 2150 kg. of wheat when compared to 1350 in 1976-77. Likewise, cotton has pushed up its yield from 550 kg|ha to 1200 kg|ha. Same is the case with gram. Changes can be noticed on other fronts too. The membership in cooperatives has swelled from 194 to 290.

Inputs pay dividends

An informal chat with Shri Kashmir Singh, a farmer-Village-Coordinator revealed that with IFFCO's guidance he has been able to increase an average yield of crop from 8 quintals|acre to 15 quintals|acre whereas hardly any fertiliser was being used in 1977. He is also happy over the equipment such as seed-cum-fertiliser drill, sprayers, dusters etc. donated by IFFCO. He predicted that IFFCO's new product DAP would also win the hearts of the farmers.

Shri Sucha Singh, who owns 80 acres of land, had words of accolade for IFFCO, which, according to him is largely responsible for making the farmers financially, and socially sound.

Realistically, IFFCO has brought about a total green revolution. That the cooperative has left an indelible impression on the minds of the farmers via its quality performance is evidenced from the fact that they are in no mood to leave IFFCO, though it has already completed its tenure of five years in the village.

(Courtesy : IFFCO News)

Welfare Hostels in Dadra and Nagar Haveli

Establishment of welfare hostels for adivasi children has positively helped to improve the socio-economic conditions of the adivasi households in terms of literacy, education, employment and income. But care should be taken to see that the hostel facilities are not cornered by a few families.

OVER A PERIOD of years, the Administration of the union territory of Dadra and Nagar Haveli has set up 9 welfare hostels under Welfare Hostel Scheme with financial assistance, in the form of annual grant-in-aid, from the union Ministry of Home Affairs. These hostels admit children belonging to scheduled tribes, scheduled castes, and economically backward classes. The inmates in these hostels are provided free-of-charge lodging and boarding facilities. The hostels are attached to schools wherein the inmates get free education. The main objective of the different welfare hostel schemes is to spread literacy and education to the 'adivasi' children in order to enable them raise their standard of living.

The grant-in-aid for the running of these hostels was raised in 1978-79 to Rs. 2.15 lakh. However, the actual expenditure incurred by the Administration on the hostels tends to outstrip the grant-in-aid received from the Government of India.

The Programme Evaluation Organisation (PEO) recently evaluated their working and suggested, inter alia, the scale of assistance required.

Major Findings

Admission Criteria

Admission was given to children of the same villages in which the hostels were located and|or villages which were within the radius of 5 kilometres of the hostel. The benefits of welfare hostel facility appear to be cornered by relatively well-off amongst the tribals.

Priority for admission to welfare hostels should be given to the wards of those scheduled tribe families who had no chance to send their children to these hostels in the past.

Food Served

The Study brings out that the food served to the inmates of the welfare hostels in terms of quantity, quality and variety left much to be desired.

Facilities Provided by the Schools

There is need for clarity in respect of norms of supply of clothing, books, notebooks to hostel inmates.

Administrative Linkage

Since the responsibility of the hostel Superintendents have increased with the increase in the number of inmates, it is recommended that whole-time superintendents should be appointed, as in the neighbouring state of Gujarat, instead of a school teacher functioning as a hostel Superintendent as at present.

Operational Arrangements

A contingency fund should be placed at the disposal of all hostel Superintendents to meet contingency requirements.

Ways and means should be found to establish administrative linkage between the hostels run by the Missionaries Society and the Education Department of the union terriory Administration.

Grant-in-Aid

The Report recommends that the existing norm of expenditure needs to be revised from Rs. 40|- per inmate, as at present, to Rs. 65|- per month. On the basis of the existing strength of the inmates in these hostels, the total quantum of grant-in-aid would need to be raised from Rs. 2.15 lakh to Rs. 3.61 lakh per annum.

Impact

The Study has revealed that the welfare hostels have positively helped to improve the socio-economic conditions of the 'adivasi' children of the areas in terms of literacy education, employment and income. As a result of the facility of welfare hostels, the number of earners per family of the selected respondents have gone up, boosted the total family income, and thereby moved these tribal families to higher income brackets. There is, therefore, need for the continuance of these hostels in the union territory.

The Report recommends that instead of opening new hostels, more accommodation may be provided in the existing hostels by constructing extra rooms for accommodating more inmates, wherever called for. Also, wherever a school is upgraded, the hostel attached to it should also be upgraded to take senior class students as inmates.

The Report also recommends that there is an overall need for ensuring education to be vocation-based and employment-linked. There is also need for arrangements of technical training and guidance in career planning to the inmates coming out of the welfare hostels.

Alternative to Existing Scheme

The welfare hostel facility could be retained for children studying upto 7th class only. For children seeking admission in 8th and above classes, the Government of India could instead consider giving suitable stipend to them. This well reduce the need for a large number of welfare hostels. Also it will, on the face of it, give encouragement to the tribal children for higher education. □

You and your health

Food poisoning

Every day we read in newspapers about food poisoning incidents. In this article, the author briefly discusses the symptoms and prevention of food poisoning.

Dr. L.N. Mohapatra

The term food poisoning is vague. Illness resulting from ingestion of unwholesome food could be called food poisoning. This may be due to food containing inorganic or toxic chemicals, poisonous food of animal or plant origin and toxic products or infections caused by several bacterial species, i.e. illness produced by a diverse group of agents and resulting from consumption of food contaminated with them.

Many well-known bacterial infections like enteric fever, dysentery, cholera are often food borne. This is also true for some of the viral and parasitic diseases like infective hepatitis and trichinosis tapeworm infections and amoebiasis. Besides these ingestion of organic or inorganic toxic chemical substances result in ill health. Poisonous foods such as toxic fungi (mushrooms) and berries and animal products also cause gastrointestinal upset. Some individuals are allergic to certain food stuff which do not cause harm to others. These are all examples of food borne infections and intoxications.

Causes

In medical terminology food poisoning, to be more precise "bacterial food poisoning", means gastrointestinal upset caused by several bacteria or their toxic products present in foods. It is characterised by outbreaks which are explosive in nature. The causative agent is in the environment with a source or reservoir and is disseminated through contaminated food which is capable of supporting the growth of the contaminating organism. It is caused by the preformed toxin (bacterial) present in the processed food or an acute infection by the bacterial agents transmitted through food. The former is called the "toxin type" and the latter the "infection type". Botulism, another bacterial food poisoning, is also a result of bacterial multiplication in the food but is due to a preformed toxin that acts on the nervous system. Hence, it is conventionally discussed as a separate disease entity.

In the 19th century food poisoning was usually regarded as a chemical reaction to ingestion of toxic substances resulting from decomposition of protein referred to as "Ptomaines". The term ptomaine poisoning is now discarded because the vast majority of food poisoning cases have been caused by bacteria which are not proteolytic and therefore cause no alteration in the taste of food consumed.

Symptoms

It is often possible to distinguish the "infection type" of food poisoning from the "toxin type" by careful examination of cases.

In the infection type the illness appears after a period varying from 4 to 36 hours (usually between 8 to 24 hours). Nausea, vomiting, diarrhoea, abdominal pain and slight rise of temperature are the usual symptoms. These symptoms gradually subside and the patient recovers in a few days in favourable cases. In a severe infection the patient suffers from extreme thirst, cramp, coma and often dies.

In the toxin type of food poisoning, the symptoms appear early, i.e. within 1 to 6 hours (usually about 3 hours). The onset is more abrupt, vomiting is more violent and diarrhoea is less prominent. Fever is usually absent and the patient recovers in a day or two.

The attack rate varies greatly in different outbreaks, partly due to uneven distribution of the infecting organism or toxin in the food and partly due to variation in individual susceptibility. Usually the attack rate is high but the case fatality rate is low. Sex has apparently little effect, but age is important; most of the deaths occurring in the very young and the very old age group.

The causative agents and their source

Several bacterial species are responsible for food poisoning outbreaks. The *infection type* of this illness is caused by Salmonellae, Clostridium perfringens, Bacillus careus, Vibrio parahaemolyticus, E. coli, Y. enterocolitica and a few other organisms. Most of these come from the environment and contaminate the food. They come from the animals and animal products, from soil and also from human carriers who harbour these organisms. Their presence in foods in large numbers before consumption leads to the gastrointestinal upset.

The *toxin type* of food poisoning is caused by Staphylococcus aureus, which produces a powerful enterotoxin while multiplying in food. This toxin is not destroyed by heat in ordinary cooking process. Consumption of food containing this preformed toxin leads to diarrhoea and vomiting.

Botulism is another type of food poisoning where the toxin produced by C. botulinum present in food leads to symptoms involving the nervous tissue. This is manifest in partial paralysis of the eyeball movement and pharyngeal paralysis. Diarrhoea and vomiting are not the presenting symptoms, though vomiting may be there initially.

(Continued on page 33)

Review Article

Airport Management

R. K. Raju

AN airport or railway station is the "window" to a country but unfortunately that realisation has not grown in India even after being free for 36 years despite our men constructing airports and railways elsewhere and receiving kudos for the same. It is in this context that I welcome this book by Mr. S. Ramanathan, who was for six years Chairman of the International Airports Authority of India (IAAI), and I earnestly hope that his thoughts and ideas will find reflection in the new international airports that are under construction in India. Has that been done ? Most of our plans go haywires because there is a wide gap between planning and implementation. I know for certain that work on the Delhi Airport was sanctioned several years after the plans were submitted but work on the first Module in Bombay was started much earlier and formally commissioned in February 1981 because it is the busiest airport of the country. "However because of the delay, both in the sanction and execution of the project, the terminal is just adequate to handle the current international traffic through the airport", says Mr. Ramanathan. But we hope that care will be taken while constructing the new international airport at Delhi to be completed in 1985 which will serve both the present air traffic and also that of the future.

Admittedly planning an airport whether in India or elsewhere is not an easy job since air transport is now the fastest growing transport in the world. A planner of airports has to be a man of vision. A leaflet issued by the Port Authority of New York and New Jersey visualises a great airport. "A great airport can be many things to many people. It can be the exciting start of an important trip or the welcome end to a long journey, wondrous place to visit or a marvel of technology to use, a place of employment for some or a brief stopover for others. To the area it serves, an airport can be even more, it can be a landmark of progress as well as navigation. A source of pride as well as income and a foothold on the future for an entire region."

AIRPORT MANAGEMENT by S. Ramanathan. Published by Standing Conference of Public Enterprises, Chandralok, Janpath, New Delhi. pp. 228, price Rs. 100.

Mr. Ramanathan has therefore not wasted his six years in the IAAI and we have a study in depth by probably the first Indian on the subject that an airport "can be many things to many people." Despite all the sophisticated machinery, hijacking continues to take place. When something goes wrong it is the airport authorities that get a bad name. Hence they must now become civil aviation experts with a specialised knowledge of security of that area. There are also other external factors like "bunching of flights" that can give an airport a bad name even when its administration could be quite devoted and sincere. With the "curfew" on night operations at the airports in Europe and in the Far-East, Delhi and Bombay have to bear the burden in the early hours.

Taking a cue from America, Mr. Ramanathan makes a strong case for the transfer of large airports, to begin with, from the Government or Municipalities and vest them in an autonomous body. Certainly a thought could be given to it in India since there are many autonomous bodies doing better than those under the Government. Mr. Ramanathan has touched almost every aspect concerning an airport from the start to the finish and I would recommend the book to every air traveller since he is bound to have a "black pach" sometime during his air travels. Unlike rail travel, air travel these days is a more complicated affair which Mr. Ramanathan brings out very well in his book.

(Continued from page 32)

Prevention

Food safety programme is aimed at ensuring wholesomeness of foods for the consumer. One careless food handler, or one human carrier of disease producing organisms jeopardising an establishment (restaurants, canteens, hotels, hospital kitchens, etc.), the greater is the danger. Preventive measures include preventing or at least limiting contamination, inhibition of multiplication of bacteria in foods and killing of pathogenic organisms. Control measures at every step, i e. cooking and processing, stoppage and distribution of food stuff, particularly liable to harbour food poisoning organisms, need to be ensured. This has to be planned based on universal scientific education The salvation of mankind lies in scientific planning of life.

(Material based on a public lecture at the All India Institute of Medical Sciences, New Delhi)

Reorganisation of Public Sector Units

The Government is concerned about the heavy losses incurred by some of the public sector units in the fertilizer sector. Administrative regrouping is one of the measures before the Government to tone up these units.

Gas-based Fertilizer Plants

Of the six new gas-based fertilizer plants, one would be implemented in the public sector, one in the cooperative and four in the private sector .The public sector plant, to be set up in Guna District of Madhya Pradesh, is being implemented by M/s National Fertilizers Limited.

The six gas-based plants are estimated to cost together about Rs 3600 crores Firm schedules for their implementation have not yet been finalised.

Science and Technology Notes

Double-Colour Thermometer

The scientists of Novosibirsk suggested using, instead of the fragile glass thermometer, a special polymer film. If a child with normal temperature is given such a thermometer the film will immediately glow green, and when the temperature is high, it turns red.

The film contains temperature-sensitive liquid crystals which, when heated, assume different colours under the temperatures from 10 to 150 degrees. These films can be used not only in medicine but in other fields also.

Now two types of thermometers are being produced--clinical double-colour and for every day use—in which figures tinge different colours to show the degree of temperature. Railwaymen, machine-builders and other specialists also took interest in the new liquid crystal material.

The use of new polymer films as temperature-sensitive elements is especially promising. Pasted on the boxes, the liquid crystal "colour-light signal" may help determine the state of the journal-boxes in cars. The polymer will flash in bright colour when the metal becomes dangerously heated. (APN)

Factory-built house foundations in the form of cassettes

Factory-built house foundations, in the form of light-weight concrete cassettes delivered to the building site by lorry and placed on previously-installed light clinker concrete plinths by crane, have been developed in Sweden. An ordinary single-family dwelling requires four or five cassettes, each one weighing about four tons, positioned alongside each other.

Since the cassettes rest on plinths, are well-insulated and manufactured of water-resistant concrete, problems connected with dampness, mould, radon, and cold floors will be minimal, according to the manufacturers.

According to the manufacturers, the cassette foundation will facilitate better quality control of house foundations since all details can be checked at the factory before delivery. Another advantage is that the cassettes can be installed irrespective of weather conditions. (SIP)

Book review

Economic Inequality

ECONOMIC INEQUALITY AND GROUP WELFARE By Siddiqur Rahman Osmani. Published by Oxford University Press, New York, First published : 1982, Pages 179, Price Rs. 110.00

The author gives new dimension to the aspects of real national income, economic inequality and poverty in their theoretical construct as also in application. An economist in Bangladesh, he develops new themes for measuring poverty and new criteria for normative comparison of inequality and poverty.

The book has grown out of the doctoral dissertation carried out by the author at London School of Economics and Political Science during 1974—78. It has six chapters along with numerous tables and appendices. A thorough going research project, it is replete with statistical analysis and mathematical interpretations.

The analysis shows that over the decade between 1963-64 and 1973-74, per capita consumption in constant prices declined in Bangladesh. Meanwhile, the extent of disparity also widened considerably in the country as well as in the rural sector, although it remained more or less unchanged in the urban sector. In terms of per capita consumption, the rural sector improved its relative position somewhat vis-a-vis the urban sector, though still remaining below the urban level. On the whole, the author argues, the standard of welfare in Bangladesh has declined.

On the issue of poverty, the conclusion that has emerged is that both the average level of poverty and the total magnitude of poverty changed for the worse between the period under study. The new methodology adopted in calculating various facets of poverty is christened the maximin approach. It departs from the traditional nutrition-based approaches in so far as it takes explicit note of the tastes in consumption while defining the minimum income required to satisfy a set of nutritional norms.

The book will be found enlightening to all manner of economists and economic planners.

Navin Chandra Joshi

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Paiyur-1, Dream seed for a paddy farmer

PAIYUR-1 is a new, high yielding variety of paddy, much in demand in Tamil Nadu.

Developed by the local Agricultural University, Paiyur-- 1 has higher grain and straw yield, which makes it very popular with farmers who use draught animals for agricultural operations.

As compared with Bhavani which yields 6819 kg/ha, Ponni with 5757 kg/ha and GEB-24 with 4032 kg/ha, Paiyur variety has been found to yield upto 7860 kg/ha under normal circumstances. Its yield is steady both during rabi and kharif.

The new variety has smaller grains with a test weight of 12 grams per 1000 grains. But its grain number per panicle is 220 and the panicle density is very high. Its sterility is a low 5% as compared to 14% in other varieties.

Even though it grows well under canal and lift irrigation, and garden land conditions, the last mentioned gives the highest yield of upto 10 tonnes/ha. Cooked, it tastes better than other varieties. Its protein content is 8.6% as compared to 6.6% in GEB-24 etc. Millers also welcome paiyur-1 as its milling out-turn is 71% against 65% of others.

It is moderately resistant to brown plant hopper, leaf folder and gall midge and completely resistant to stem borer, blast and rice tungro virus. Himinthosporiose does not affect it after flowering.

Paiyur-1 gives high yields at low levels of nitrogen. Depending upon initial fertility of soil, it is better to decrease nitrogen dosage to 80 kg/ha or even less.

It is alkali tolerant and requires very low management levels, added to the consumer popularity that it obtained. Taking these into consideration, a special "Operation Paiyur-1 " Scheme is under implementation in a contiguous area of this high yield paddy.

This variety has been received very well in Dharmapuri, North-Arcot, South Aroct, Salem and Coimbatore districts.

To cultivate an acre of land with Paiyur-1 will cost around Rs. 1,500 and the yield will be about 2000 kg of paddy plus Rs. 150 worth of straw. Profit per acre will be around Rs. 1,500. Garden land cultivation will yield even higher profits. In fact, it is the dream seed for the paddy farmer.

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Madurai's model for harijan welfare

IN MADURAI, some 25,000 harijans get rice, wheat, maida, sooji, palm oil, sugar, kerosene and other essential items through three fair price shops, run by the Madurai City Harijan Cooperative Society. Blackmarketeers no longer exploit their weakness and ignorance.

Formed in 1948, the Society functions for the benefit of harijans living within the City Corporation limits. There are 5,942 harijan families, having 25,170 members, in Madurai. The Society presently has a membership of 2,442. It paid up share capital is Rs. 2,47,000.

Initially the Society gave loans to needy harijans and financed joint purchase of domestic and other requirements of its members.

The Society has purchased 13 cents of land in Sathamangalam area in Madurai and proposes to build a three storey building in it, with 1,576 sq. ft. floor area in each floor. The building will cost Rs. 6.5 lakhs and the Tamil Nadu Cooperative Union has advanced Rs. six lakhs for constructing the building.

By advancing personal surety loans to harijans, the Society has been able to save them from local loan sharks. The popularity of the Society is reflected in the phenomenal growth of its membership and assets.

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RELEVANCE OF GANDHI IN ECONOMIC PLANNING

VOL. 27 □ NO. 19

OCTOBER 16—31, 1983 □ RUPEE ONE.

Regional disparities in India

NEXT ISSUE

Social Forestry : Gains & failings

MAKE CLOTH while sun shines and save energy too! This is what a textile mill in Ahmedabad is doing now. The Jahangir Textile Mills, a unit of National Textile Corporation (Gujarat), has been successfully using the sun shine or solar energy to heat about 6000 litres of water and 2000 kgs. of air at 80° C everyday. The hot water is used for bleaching the grey cloth while the hot air is used for drying yarn and cloth. For this purpose it has put up on its terrace over 100 glazed glass sheets, better known as solar collectors to tap solar energy.

The solar-hot-water-system, commissioned in May, 1981, saves about 38 tonnes of coal annually, while solar-hot-air-system, commissioned in January, 1983, saves about 38 litres of fuel oil everyday.

The theory of using solar energy in a textile mill is based on the fact that nearly 90 per cent of total energy consumed by a textile mill is below 110 C and it can be met from solar energy. The installation of solar systems at Jahangir Textile Mills is sponsored by the Commission of Additional Sources of Energy, Ministry of Energy, Government of India. The know-how of the system is developed by the Central Salt and Marine Chemicals Research Institute, Bhavnagar in collaboration with Ahmedabad Textile Industries Research Association. The cost of the solar installation can be recovered within a period of 4 to 5 years.

Encouraged by the success of this experiment, the Jahangir Textile Mills has now decided to instal a solar low pressure steam generation plant at its premises during the course of next few months.

Jahangir Textile Mills is the first mills in the country to make cloth and save energy while sun shines ! □

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For discussion on relevance of Gandhi in economic planning we approached Prof. A.M. Khusro, Member, Planning Commission and Prof. J.D. Sethi, ex-Member, Planning Commission with a specific query on the relevance of Gandhian concept in the framework of our planning process. Here we present the views of these two eminent economists —Editor.

1

Relevance of Gandhi in economic planning

His thought permeates our planning process

A.M. Khusro

A well-known economist and a Member of the Planning Commission, Prof. Khusro explains the Gandhian concept of economic planning and shows how the concept forms bedrock of the 20-point programme, the logic of which, says the author, would have delighted Gandhi.

THE ACCEPTABILITY CURVE, so to speak, of what is called Gandhian Economics reached a high peak in the pre-Independence era, suffered some kind of an ebb in the post-Independence period owing to the influx of such notion as industrialisation, high technology etc. and has been rising again in recent years, at any rate in respect of many of its tenets.

One of the basic tenets of Gandhian economics is simplicity in consumption and refrainnig from conspicuous expenditures. The concept is somewhat akin, to the concepts of 'halal' and 'haram' in Islamic economics, which signify restrained consumption out of a hard-earned and legitimate income from non-exploitative sources. Be that as it may, in the pre-Independence era, under the leadership of Gandhiji himself, the interpretation placed on such restrained consumption was the boycott of sophisticated foreign goods, including clothing, and promotion of locally produced simple goods in particular khadi and the products of village industry. The concept was aimed especially at the boycott of cotton and woollen textiles made in the mills of Lancashire and Yorkshire. This concept became a very important element in cutting out foreign goods and putting pressures on the British rulers of this country and was instrumental, along with some other very important ideas and pursuits, in giving independence to this conutry.

Going the Gandhian way

The restraint on consumption preached by Gandhiji had its obverse in an increase in the rate of saving as a proportion of national income. In the post-Gandhian era of Indian planning, despite many deviations, emphasis in Indian policy continued to be on restraint consumption and increased saving. If today India has reached a figure of national saving as high as 22 per cent of national income—which is perhaps one of the highest rate of saving among the developing countries and also one of the highest in any country of the world— and if three-fourths of this saving is coming out of the household sector, it is a legitimate question to ask whether this phenomenon is not due to a firm influence of Gandhian ideas embedded in Indian society. It is a different matter if this saving is not being utilised most effectively and if the efficacy of the deployment of this saving in capital formation leaves much to be desired. But the saving is there and the figures are relatively high.

Moreover, though India today is one of the better performing countries in terms of developmental planning, any comparison of the range of consumption goods, especially luxury goods and ostentatious goods, used in India vis-a-vis many other developing countries —not to mention developed countries—shows that Indian consumption remains relatively simple. The new gadgets and the consumer electronics have arrived and are arriving but their use remains confined to a small segment of Indian society. The simpler and more essential goods are much more widely available and are being used. A great deal of percolation of industrial goods has occurred in agricultural and rural populations and this is a phenomenon which Gandhiji would have lauded. But at the same time, a great deal of a reverse percolation of goods produced in the country-side and in small scale industry has occurred in urban society and this, too, Gandhiji would have appreciated. Life in India continues to remain relatively simple in terms of the basket of consumer goods and this phenomenon of simplicity hits one in the eye whenever one returns to India after observing things in a foreign country, including countries of the developing world.

And no denying the deviation

Having said this, one must also agree that the deviations from Gandhian prescriptions are all there. The flamboyant expenditures on weddings and other ceremonials, the continuation of the dowry system, very often including ostentatious goods, the frequent exhibitions of mal-distribution of income and the percolation of black income as revealed in unnecessary ceremonials, loud clothing, conspicuous display of jewellery and ornamentation and a repulsive and unethical display of conspicuous housing—all this and more continues.

Moving from the sphere of consumption to that of production, Gandhian economics stood for relatively simple processes of production, especially those which absorbed a great deal of labour per unit of capital. This was obviously intended to cater to the needs of millions of our people who needed to earn an income from gainful employment. Production had to be labour-intensive in character if early employment for these millions was to emerge. Indian policy and planning has always been mindful of this requirement and there is no doubt that a great many of our projects have been labour intensive in character. But Gandhiji would have liked to see greater efficiency in this labour intensive sector. It was not his intention that this be a flabby sector with low productivity per man or per unit of capital. Such items as the electrification of processes, the increased efficiency of tools with which the labour could work, the provision of higher skills to workers through investment in man, through better training programmes, better supervision and better management—these concepts were not averse to Gandhian philosophy. In the absence of Gandhian formulations, it is conceivable that this country would have gone on the road towards mechanisation and more capital-intensive methods a little faster than it has actually done. Vast tracts of Indian industry not only in rural areas but in urban sectors too, have remained labour intensive. But in all probability, the efficiency of labour has not risen as much as Gandhiji might had expected and desired, barring in some sectors of the economy.

There is this efficient sector

One of the relatively efficient sectors today compared to its own past, is the production of handicrafts and handlooms. In this sector, quite often, technology has improved, new processes have been discovered, improved raw material is being used, new designs and patterns have emerged and organisation has been toned up. Thanks to some vision in the policy making circle in this area, many handicrafts have not only survived within the country but have also made an in-road into the demand patterns of foreign countries; sometimes their uniqueness, sometimes their high aesthetic standards and sometimes the quality of production has attracted wide attention both within and outside the country and the sector has not only survived but also gained in strength. The same is true of items like carpets and leather goods which have made big in-roads in the world markets.

Perhaps the greatest thing that has happened in India since the middle of the 1970's and is happening today in a big way is the emergence of the public sector programmes of rural and urban development, focussing generally on the poorer sections of the community and attempting to lift up the down-trodden economically from below the poverty line to above it. All in all, Gandhiji would have been delighted at the approaches in these programmes. These include the Integrated Rural Development Programme (IRDP), the National Rural Employment Programme (NREP), the Minimum Needs Programme, the Integrated Child Development Programme, the Tribal Development Programme and so on.

The 20-point programme

The overall caption for these programmes is the 20-point programme. Now the essential feature of these programmes is that they focus on the poor, both rural and urban. Down-trodden families and individuals, well below the poverty line, are sought to be selected and are then given subsidies to provide them with capital in order that they join productive activity pertinent to that area. The activities are to generate output and income for the family and the individual. Real output generation and asset formation are the watchwords of these programmes and it is for the first time that economic planning is really focussing on rural and urban development in the lower strata of society.

The Gandhian concern about the uplift of the down-trodden segments of Indian society is very much evident in the 20-point programme. That concern and the felt needs of the people for gainful employment and a minimum income are the main motivations for the operation of these great programmes. As these programmes are very young, there are, of course, many lacunae in these ventures. Sometimes the families are not being rightly selected with due regard to their down-troddenness; sometimes the activities chosen are not the best and not exactly in line with the resource availability, the local talent and the local requirements; sometimes the subsidies provided are not adequate and more often than not adequate infrastructures for production, processing and marketing do not exist.

One of the basic points in these programmes is their linkage with the banking sector and the provision of credit in addition to the subsidies. Irregularity in the provision of credit and in other aspects of the operation of these programmes have been coming to light, but most of these can be corrected. As the evaluation and monitoring of these programmes proceed, it is certain that the programmes will improve in their performance and in their utility to the poorer sections of our people.

All in Gandhian spirit

These programmes are very much in the Gandhian spirit. But the next stages in these programmes will probably be more so in that spirit. As far as one can tell, linkages of these great rural development programmes with the agricultural sector are going to grow the desilting of tanks with the help of rural labour, the digging of wells, the construction of field channels, the levelling, bunding and drainage of lands, the fencing of farms may well be an important aspect of the NREP, the National Rural Employment Programme.

Another direction that these programmes may take would be to focus attention on the village artisans and craftsmen, who have so far been neglected in our planning system—the village carpenter, the metal worker, the tanner, the cobbler the smithy, the silversmith, the *dai*, the *vaid*, the weaver, the spinner and the makers of handicraft, may well come up for serious attention. These are the professions that have sustained the Indian village on their shoulders for centuries and these are the people about which Gandhian economics was bothered. So far it had been implicitly assumed that these skills and professions will not be able to withstand the market forces and that they may fall by the way-side. This would seem to be utterly untrue. With a technical upgradation of their skills, the provision of more effective tools, the electrification of processess, the extension among rural people of experts from the community poly-technics, the ITI's the Industrial Training Institutes and the TRYSEM programmes, there can be an effective upgradation of rural technology. If we combine with this, the provision of resources through the planning process and the imparting of management skills (from organisation like the Rural Management Institute, as at Anand) the quality of rural production can improve phenomenally costs can be reduced, returns enhanced and the marketability of rural producion can become effective not only in the Indian urban market centres but indeed in countries far and away. It is essentially a question of enhancing the volume of production per worker, per unit of time, and improving the quality of output. All this is on the cards and certainly not beyond early possibility; and all this, indeed, is in the Gandhian way.

Considering that the total size of the Sixth Five Year Plan is around Rs. 1,00,000 crores and the beneficiary-oriented programmes taken together amount to something around Rs. 25,000 crores, we can see that a big dent can be made into rural poverty. These programmes, if toned up efficiently, can not only turn out to be the greatest anti-poverty instrument that mankind had known, but can attract world attention. But much has to happen before this statement can become true. Apart from human energy and conventional forms of energy like electrification, there has to emerge an extensive supply of unconventional forms of energy like solar energy and energy from bio-mass before these programmes can become really effective. But once this happens, limitless possibilities will emerge.

Gandhi was for "moderate industrialisation"

Gandhian economics was never against moderate industrialisation. Gandhiji knew that the main felt need of the people is income-generating types of employment and that employment emerges when capital goods, i.e. goods which produce more goals, expand sizeably. After all, in Gandhiji's days major industrialists and industrial houses already existed and Gandhiji was in touch with them. He only wanted the industrial community to work as "Trustees" of the people. They had to bother about public interest and provide employment to the masses in their industrial organizations. Although Indian industry has been providing massive employment both in the public and the private sector and many firms have been looking after their workers quite effectively, providing health facilities and other social amenities it is doubtful whether all this can be taken to have fulfilled the role of trusteeship which Gandhiji had envisaged. But the chapter is not yet closed.

The companies and the corporations can play a major role in providing housing facilities to a large number of workers, health and educational facilities and training programmes for skill formation. They can team up with universities and technical training institutes by providing scholarships by indicating the lines of training required by the market and by providing some of the training in their own establishments. They can also absorb a large number of trained manpower and team up with government institutions in adult education programmes. Companies and corporations, both public and private, can provide larger funds for R&D and assist in the development of technologies relevant for small scale industry and the rural industry. They can also assist in the diffusion of technologies in agriculture as well as industrial sectors and all this could be in fulfilment of the Trusteeship role. □

Over five lakh leprosy patients identified

THE NATIONAL LEPROSY ERADICATION PROGRAMME WHICH has been assigned the topmost priority in the health scheme following the recommendations of the Swaminathan Committee has been given an additional allocation of Rs. 50 crores for the remaining period of the VIth Plan, bringing the total to Rs. 90 crores.

Over five lakh cases of leprosy patients have been identified in 1982-83. Of these 4.86 lakh patients have been brought under treatment. This is in keeping with the objective of achieving 50 per cent reduction in the existing leprosy prevalence rate, infection rate and deformities rate.

Maharashtra bags first prize for best performance in family welfare

THE FIRST PRIZE of Rs. 2.5 crores for best performance in Family Welfare for the year 1982-83 has been awarded to the State of Maharashtra in group 'A' by the Ministry of Health and Family Welfare. The second prize of Rs. 1.00 crore in the same group has been awarded to the State of Haryana.

Maharashtra has led with a record 6.22 lakh sterilisations, 0.88 lakh Intra Uterus Device (I.U.D.) insertions, 3.01 lakh conventional contraceptive users and 0.54 lakh oral pill users in 1982-83. Haryana recorded 0.86 lakh sterilisations, 0.38 lakh I.U.D. insertions, 1.55 conventional contraceptive users and 1000 oral pill users.

These prizes have been awarded following the announcement of cash awards to States for best performance in Family Welfare by Shri B. Shankaranand, Union Minister for Health and Family Welfare in February this year. □

2

Relevance of Gandhi in economic planning

No, not so, argues Prof. Sethi

Prof. J.D. Sethi

"My answer is no. The very fact that the antipoverty 20-point programme has not made any appreciable dent on poverty reveals the widening gulf between the Gandhian principles and the planning mechanism", says the author, and adds "planning could also prove counter-productive if people, given the task of planning and implementing, were not sufficiently trained or committed."

THERE IS A STRAIGHT ANSWER to the question which the Editor of Yojna has put to me : whether or not there exists any Gandhian principle in the framework of Indian planning and more particularly in the Sixth Five Year Plan. The answer simply is in the negative. There is nothing of substance in the Sixth Plan document that can be specifically called Gandhian. One may be tempted to classify as Gandhian some of the anti-poverty programmes enumerated in the 20-Point programme. But the very fact that these programmes have not made any appreciable dent on poverty in India reveals the widening gulf between the Gandhian principles and the Planning mechanisms.

The Government can take shelter under the plea that programmes have been drawn with good intentions and that something has gone wrong with their implementation but no serious economist can support that kind of an explanation because making of policies and their implementation in modern bureaucracies are two sides of the same coin. There are too many parasitic elements mediating between the programmes and the people or what are called the target groups.

However, there is one part of the Gandhian proxis which might be of value to those who wish development to go in the right direction as well as take part in it. When the British colonialists started programmes of rural development in India, the ostensible aim was to help the rural people but the real purpose was to strengthen those classes which supported the colonial system. Gandhi did not reject the programmes. He took it up and through it so massively mobilised the people for independence struggle that even the British did not understand what was happening. Therefore if the Government is faltering in giving a proper thrust to the 20-Point programme which is meant for the poor, then those who wish the restructuring of Indian policy and economy on Gandhian lines could take up this programme for implementation in the right way.

The trouble is that few people in this country have applied their minds as to what the Gandhian planning principles are. Indeed very little work has been done on the Gandhian economic model, largely because of the prejudices against Gandhi held in the West, whether from Marxist, Keynesian or Liberal mainstream. Therefore, the best I can do is to briefly state some of the important Gandhian oranisational principles so that the Planning Commission may consider them for the framing of Seventh Five Year Plan.

The Gandhian concept

Economic planning has come to be universally accepted as a necessary part of social decision making and realisation of national or sectoral goals. It is inconceivable that modern economies or production units can work without some kind of planning. We need not indulge in semantics to prove that ordinary household also plans its expenditures and resource allocation. We limit our discussion to the general planning of the economy over a wide spectrum, from the macro to the micro. But it must be emphatically stated that in Gandhian planning, need-based expenditure planning of a family plays a critical role.

The concept of planning became popular in the post-War II period. Planning agencies and planning commissions were set up in many countries, particularly in the developing countries. It was soon found that planning could also be counter-productive and its objectives and scope were not properly delimited or if people given the task of planning were not sufficiently trained or committed For instance bureaucracies proliferate not because they are more committed or anxious to achieve national objectives but because it gives them power over others. Politicians talk about planning from housetops less out of knowledge or commitment and more for propaganda purposes. Economists and other social scientists can draw up model of planning by so much loading the phrase **other things remaining the same** that models are reduced to pure algebraic exercises and extremely distanced from reality.

Of course we have the proverbial haters of all planning. For them planning not only is a violation of economic laws and freedom of economic choice but also poses a threat to political values. We need not bother ourselves about such extreme views. Nevertheless, since planning has been accompanied by proliferation of governmental bureaucracy, relative shift of power from the institutions of civil society to the state can be a source of worry about the erosion of human freedom. How to integrate the planning principle with other organisational principles and cherished values remains not only the unresolved problem but has beoome the crisis point of modern societies.

Gandhian framework

Gandhi alone met this challenge of integration. Before delineating upon his approach, it must be stressed at the beginning that Gandhian planning and its concepts are diametrically opposed to the Marxist, the Keynesian, Liberal Capitalist, Nehruvian (mixed Marxist-Liberal) or any other well-known planning model that we know of or has been experimented with. Anyone who is a purveyor of these models or has a blind faith in them cannot possibly accept the Gandhian framework of planning.

The difference essentially arises from the very definition of economics. For Gandhi, there is no such thing as pure economic man or economic activity and therefore there is no such thing as a pure science of economics. He mildly reminds us of Adam Smith, Sismonde, Ruskin and one or two other economists who had stood outside the mainstream economics. Economic and ethics must form one whole in the formulation of development and planning strategies. Economics is as much considered with utility as with self-actulisation

If planning for the **economic man** has been too difficult and too complex, how can there be planning for a "larger" man? Surely within the spectrum of usually accepted models of planning there is none which can cope with this task. Yet the problem has to be pinned down and it can be done so by clearly defining relevant organisational principles. These organisational principles certainly go beyond merely stating or structuring some ideal property relations around which model planning revolves.

Those who did write about what they call Gandhian planning, have also not done justice to Gandhi because few have really understood his methodology for planning of economic life. For instance, the late Shriman Narayan hurriedly wrote a book on Gandhian Planning in 1944 when the debate on planning became fashionable, and was credited with having interpreted Gandhian planning. In my view he misread Gandhi despite his best attempts to catch the spirit of Gandhi. His limitation was that he was not a trained economist. Gandhi while writing an introduction to that book was somewhat ambivalent.

He wrote, "I am sorry to have to say that I have not gone through the treatise with the attention it deserves. Nevertheless I have read enough of it to be able to say that he has not mis-interpreted me in any way." The question was interpretation or misinterpretation is different from that of adequacy. Shriman Narayan could not catch up with the radicalisation of Gandhi's ideas that began in the middle of thirties. Besides, after being released from jail in 1943 Gandhi plunged into political battle and did not have time for economic theorising.

The three problems

All economic systems revolve around three problems : production, exchange and distribution. It is only in terms of these that the planning processes are also explained. With regard to production and production planning, the usual organisational principle is either market mechanism or a state-run system for socialism, fascism or mixed economy. The last one was adopted by India after Gandhi. To Gandhi all three were variants of the same principle because none of them dealt with **the question of production by the masses as against mass production.**

Ironically, the non-Gandhian models have fallen into traps that they laid for one another. State ownership denies the market principle and substitutes it for total planning. The corporate sector jointly determines its planning procedures for the production and costs as well as profits but without any explicit macro planning. But just as the nationalisation of means of production degenerated into the emergence of a bureaucratic class which monopolised not only decisions about production and profits, wages, etc. but also political power, the corporate system too drastically curtailed competition to precisely do the same. Ironically, the communist nations are searching for some relevant market principle and the capitalist system for planning a welfare statism. That is why the problems of investment planning, determination of priorities, technology choices are becoming similar in both systems. It is not surprising that both systems while improving the technological base of their respective production systems are creating problems of multiple alienation on the one hand and total militarisation on the other. Both are ruled by highly structured military-industrial complexes.

In the entire developed world technology and planning of the economic system can ensure adequate production for all. But excess production has produced a massive sense of relative deprivation and terrible fear of one society pitted against the other. No wonder the military planning and war strategies of the US and Soviet Union are also exactly the same. Indeed the organisational principles of their military and economic planning flow from one another.

The trusteeship principle

The most crucial organisational principle of the Gandhian planning, as opposed to all the prevailing principles is the trusteeship principle. It is not surprising that it is rejected by both the capitalists and the communists. Trusteeship accepts the existence of both private as well as public ownership for a fairly long period until both get dissolved into final and total trusteeship. But it should not be confused with mixed economy which has no theory. During the intervening period, enterprise planning will provide partnership for all concerned. Trusteeship alone provides the true socialisation principle. Statism and corporate system have got perverted because the respective enterprises have not known how to socialise themselves through common ownership. Common ownership is one in which the owners, the managers, the workers, the consumers and the community at large all jointly take all decisions. In **fact, trusteeship and common ownership, as sharply distinguished from nationalisation is the ideology of Gandhian planning.**

According to non-Gandhian models, production, whether at the macro or at the micro level, is undertaken to meet a certain perceived,, expressed or projected demand. This is a half-truth. Production itself creates demand particularly if pressure propaganda is pressed into service. There is a circularity between demand and supply. Gandhi broke this circularity and made the human needs as the primary determinants of all production. These needs were exogenously determined, by biological, social and other requirements. All production which is outside the framework of human needs will have to be sanctioned on what Maslow calls the Deficiency Principle.

In other words, threre will be a hierachy of needs and planning would require production to conform to this hierarchy. No prevailing planning system even if ultimately satisfying the basic needs of the people starts with this hypothesis. That is why every system is wasteful, inequitous and final generator of artificial demands and has well entrenched pockets of poverty which is another name of denial of human needs. Instead, consumerism has overtaken every human value everywhere, in capitalist, communist and developing countries. The fight against consumerism cannot be conducted outside the framework of planning for needs.

The bitter truth of the aforementioned statement appears in the form of unsuccessful attempts on the part of the environmental movements, which have widely proliferated, to stop the depredation of the mother earth. So long as the economic system itself is dominated by consumerism and technological determinism environmental planning is just not possible. The US is spending 15 billion dollars a year in order to create technologies that will fight technologies of depredation. Industrialisation in Europe has now brought the shocking news that nearly one-third of trees of Europe are dying because of industrial pollution and use of chemicals in agriculture.

Appropriate technology

An essential principle of Gandhian planning is what is popularly called Appropriate Technology. This word is much misused because it has no clear definition. Technology is appropriate not only to the resource availability but also to the demand pattern. If needs instead of wants constitute the demand and if full employment is guaranteed, the choices among given technologies get narrowed. But we have a far more complex problem; technology itself becomes a substitute for resources and determines demand pattern. This is called technological determinism. An appropriate technology in Gandhian sense is one which, besides fully utilising or augmenting the existing resources and even letting and removing the relative scarcity of a resource, will keep it need-determined, be they needs of the individual or the society. The crucial Gandhian principle is that technology should not violate in any way the principle of creation of a non-violent and non-exploitive society. Certainly no technology would be acceptable to Gandhi which in the name of improving the productivity will alienate man either from other men or from nature or from himself. Therefore, the scope and definition of appropriate technology in economic planning must be appropriately understood before one tries to operationalise it.

The crucial difference

There is a fundamental difference between Gandhian planning and all other planning in another crucial way. Whereas generally planning is accepted as means or instrument for achieving some economic objectives such as desired investment pattern, growth rate, employment, price stability, etc., the Gandhian planning and the resultant economic system are both means not ends. This end is self-actualisation for which highest priority has to be given to the removal of poverty and unemployment. All other objectives are subject to the achievement of these two because no self-actualisation is feasible in conditions of poverty and joblessness. In fact, right to work in Gandhian planning is a fundamental right as also is the obligation to work at the same time. Rights and duties are inseparable. The preference for labour-intensive projects arises from the view that unemployment and poverty are structural problems and therefore need a "feasible maximum weightage to labour-intensive activities within the investment mix."

Soviet planning by design and capitalist planning by the compulsions of market forces have led to self-determining and self-sustaining high capital-intensity and high capital accumulation for maximising either national surplus or total profit. Technological developments too have by and large pushed the system in the same direction. The longer the horizon, the greater the need for capital accumulation. Employment becomes a residual, for even the Keynssian employment theory which is the only explicit theory of employment is relevant to the study. In Gandhian planning, capital-intensity is not only subject to full employment but also conditions of appropriate technology. Significantly, time horizon will also have to be shortened in order not to allow capital overtake labour.

In Gandhian framework, sectoral planning is made subservient to spatial planning. The Gandhian space is determined by the self-sufficiency of clusters of units which are organised over a given space. The most important planning unit is the village. The Gandhian village is not a simple collection of houses and dirty lanes and ill educated and ill-fed people. It is self-ordained community of educated, fully employed, artistic, socially conscious and spiritually developed people. Its size is determined by the two principles : political and economic. Politically, the village community will be the basic unit for Participatory Democracy, as distinguished from Representative Democracy we know of, i.e. all its members will be directly participating in all decisions including decisions on planning. In economic life, it will be fully cooperatively organised and provide most of its basic needs. Sectoral behaviour and equilibrium will result from this principle of self-sufficiency.

Bread-labour

Gandhi's village, as an economic and planning units, will have to satisfy requirements of the Gandhian concepts. A village certainly will not have large scale industries but it will have all those technologies which enhance the value of life. The essential principle of village planning is that everybody will have to work not only with brain but with hands also. Bread-labour is a fundamental Gandhian concept which most planners and economists have not even heard of. Since every body will also directly participate in the decision making, he will assume the role of value-creator. In other words, members of village community will be engaged in self-defining and self-actualisation. Service to others will be one inescapable link between people.

Sometimes people call Gandhian planning as decentralised planning. As such the phrase has no meaning. It has a meaning in the sense mentioned above, namely, that within a society in which there are many centralised agencies, new planning mechanism will have to be structured in which people, as groups, plan for themselves. If bureaucracy continues to plan both for the centre and the local level, as we find the situation in India, it is not decentralised planning. Decentralised planning would mean shortening the distance between those who wield power and the institutions of civil society. The dynamics of the Gandhian planning is that a limited number of decisions will be left for the top. This also implies that optimum degree of self-sufficiency would be available to each layer of the economy.

If the distance between the power wielders and social groups has to be reduced it can be done through shifting the direction of decision making. Instead of decision making being a process moving from top to bottom it has to be reversed, namely, to bottom-upward. Planning system is always a two-way process of decision making and feed-back but in the prevailing situation decisions are taken at the top and the feed-back is expected from the bottom in order to revise the decisions. In the Gandhian planning, the decisions would be made at all the levels but the demand and objectives would be first assessed at the lowest social unit and then transmitted upward.

Planning at the bottom

In fact in the final analysis there should be very little of planning at the top and most of it would be at the bottom. This is the meaning of decentralised planning and not in any abstract sense. There would certainly be areas of development which will be of the national significance and in respect of which the economies of scales become important, for instance, railways, steel production, heavy engineering, etc. In such cases national planning would be important. Even in these cases the same decisions will be made by the lower units as much as by the planners at the top.

At the micro level of planning, except for the very small and the very big units, production for most others will have to be organised in cooperative units. We know enough about the traditional cooperative principle but it is neither good nor adequate and therefore needs further elaboration. But that need not hold us here. This principle applies everywhere, to industry, agriculture, trade, services, etc. We do not have to turn right now the whole system over to cooperativisation but large chunks can be transformed.

For instance in the Indian agriculture, three-fourths of households own only less than one-quarter of land. These households are composed of landless labourers, small and marginal farmers. Leaving out capitalist and family farms for some more time, the rest must be organised into cooperatives for both agriculture and non-agriculture. More than employment in agriculture, they need non-agricultural employment. Co-operativisation does not mean that all small units of land must be merged into a few big farms. In fact, the other Gandhian principle which rejects "bigness" as such would not permit such a merger. The unit of cultivation will be small though of economic size. But the whole economic life will be organised on cooperative principle. Cottage industries will always be located in the cottages for production purposes but everything else connected with them will be managed through the cooperatives.

This terrible confusion

Let me refer in passing to the importance of this principle with regard to the terrible confusion that exists over issues of environmental protection, supply of fuel wood for the village, the pastures, soil, forestry, etc. None of these problems can be solved by itself. Each problem belongs to a common pool of problems and the cooperativisation principle is the right framework within which alone these problems can be tackled and true planning not only of agriculture but the entire rural life can be made possible.

If the Soviet experiment with cooperatives has failed, it is for exogenous reasons : the undemocratic character of the economic life, Stalin's attempts to accelerate industrialisation at the cost of agriculture, total denial of market principles and, indeed, the destruction of the entire cooperative principle itself. But there was also an endogenous reason, namely, the turning of cooperatives into collectives and introducing industrial principle of state enterprise into them.

In the final analysis, in the framework of Gandhian political, economy and planning, after some initial stages of development have been completed the role of the state has to decline so much so that ultimately it has to wither away. Gandhi like Marx believed that the state is the concentration of coercive powers. For that reason, a non-violent society cannot accept the finality of the state. The state would be asked to play a crucial but dynamically a diminishing role. Otherwise it would remain a threat, to human freedom and self-actualisation. The short-run role of the state is significant for removing the existing distortions, inequalities and exploitation. Therefore, the state has to perform a double role, namely, to plan economic and social development in the interest of the people and also liquidate itself slowly for the same reason so that planning becomes a part of life of those for whom the planning is designed. In other words, the central organising and dynamic principle of Gandhian planning is that planning by one set for another is to change to planning by the set or sub-set for itself. □

Solar energy for timber seasoning

SOLAR ENERGY, already being put to variety of uses, is now to be used also for seasoning timber which lends better service life to the wood.

A solar timber seasoning kiln sponsored and financed by the Department of Non-Coventional Energy Sources of the Ministry of Energy was inaugurated at Okhla recently by the Union Minister of State for Industry, Shri S. M. Krishna. The kiln is being operated by the National Small Industries Corporation.

Big timber industries usually use steam heated timber seasoning kilns consuming large amounts of conventional energy sources like coal, oil or electricity. The economics of steam heated timber kiln makes it prohibitive for small scale operations compelling most saw mills or small furniture manufacturing units to opt for open air timber seasoning or natural timber seasoning which suffers from many disadvantages including the pronged period of seasoning and blocking of capital on that account.

The Department of Non-Conventional Energy Sources has already sponsored six similar kilns in the country and nine more solar kilns are expected to be installed during the current financial year. □

Energy scene in India

S.R. Das

The energy needs by the end of the century would be of stupendous nature. Maintaining the equilibrium between demand for and supply of energy needs would pose a serious challenge to the nation in the coming years. Therefore, the author argues, the energy planners would have to initiate action right from now to formulate long term supply measures so that they are not caught napping at that time.

SINCE INDEPENDENCE and the advent of planned development of our economy, the Indian energy scene has undergone a distinct change. In overall terms, the reliance on traditional or non-commercial forms of energy has gradually declined over the years and consequently the share of modern commercial forms of energy has steadily increased. While the industrial and transportation sectors have developed and flourished mainly based on commercial energy, the agricultural sector, which depended exclusively on animate forms of energy, has been gradually shifting to the use of oil and electricity as a result of modernisation of agricultural practices. Thus, the preference towards commercial forms of energy has resulted in manifold increase in its demands. The growth rate of commercial energy consumption has, therefore, been outpacing the overall growth of the economy of our country. GDP elasticity or elasticity of energy consumption to economic growth (defined as the ratio of the percentage per year increase of total commercial energy consumption over a period to the percentage per year increase in GDP over the same period) varied sharply in the different periods as would be seen from the following table :

TABLE-1

Energy-GDP Elasticity Co-efficients in India

Period	Energy/DGP elasticity Coefficient
1953-54 to 1960-61	1.95
1960-61 to 1965-66	2.63
1965-66 to 1970-71	1.24
1970-71 to 1975-76	1.86

It is a cause of legitimate national pride that over this period of thirty years after independence, India has become self-reliant in respect of all forms of energy except oil which we are compelled to import to meet our requirements.

Trends in energy consumption

The most striking feature of India's energy scene is the importance still played by the non-commercial forms of energy though its share has declined from about 75 per cent in early 50's to about 59 per cent at present in terms of heat content. The non-commercial forms of energy is mainly used in the house hold sector, particularly in the rural sector of Indian economy.

The trend in the use of commercial forms of energy by ultimate consumers in our country is presented below :

TABLE-2

Direct Consumption of Commercial Energy by altimate Consumers

Year	Coal* (Million Tonnes)	Oil (Million Tonnes)	Electricity (GWH)
1953-54	28 7	3.6	7.6
1954-56	28.8	4.7	9.5
1960-61	40.4	6.7	16.9
1965-66	51.8	9.9	30.6
1970-71	51.4	15.0	48.7
1973-74	57.3	16.7	56.2
1975-76	71.0	17.8	66.0
1980-81	73.0	24.0	90.0

*Direct use (excludes use of coal and oil products for power generation and use of oil as RBF.)

From the closer look of the consumption pattern, the most significant feature which attracts immediate attention is that the two decades prior to the oil crisis, witnessed a gradual decline of coal as a direct source of energy and growing preference towards oil and electricity. During the period 1953-54 to 1973-74 the consumption of coal, oil and electricity by the ultimate consumers increased at an average annual growth rate of 3.5 per cent, 7.9 per cent and 10.8 per cent respectively per annum. The changes in the pattern of commercial energy consumption since 1973 is noteworthy. There was a spurt in coal consumption in 1974-75 and 1975-76, though it was levelled afterwards. On the other hand, there was practically no growth in oil consumption in 1974-75 and 1975-76 mainly because of paucity of supply, various conservation methods adopted and substitution of oil by coal, wherever possible. However, it has picked up again. The buoyancy in consumption of oil in recent years was mainly because of increased use of oil for agricultural purposes. The consumption of electricity has also slowed down to some extent but this can be attributed to shortages in some parts of the country since the later part of the 4th Five Year Plan.

The following table gives a fair idea about consumption of energy by various sectors of the economy during 1975-76 and 1978-79 :

TABLE 3

Consumption of Commercial Energy by various sectors

Sector	Coal		Oil*		Electricity	
	1975-76	1978-79@	1975-76	1978-79@	1975-76	1978-79@
Household	5.1	5.8	33.7	20.3	8.8	9.1
Agriculture	—	—	8.0	13.7	13.2	14.2
Industries	71.9	73.4	6.4	6.4	65.6	63.8
Transport	20.3	18.0	58.9	52.4	2.9	3.1
Others	2.7	2.8	3.0	4.2	9.5	9.8

*Relates only to energy use.

@Figures for 1978-79 are provisional.

Data regarding consumption of non-commercial forms of energy is very scanty. One estimate placed the fuelwood consumption in 1975-76 at 133 million tonnes, agricultural waste at 41 million tonnes and cow dung cakes at 73 million tonnes. A recent sample survey carried out on a countrywide basis has placed the fuelwood consumption in 1978-79 at 96 million tonnes, agricultural wastes at 31 million tonnes and cow dung cakes at 72 million tonnes.

Energy resources

Coal

India is endowed with sizeable reserves of coal and thus coal has been the most important source of commercial energy supply to our country. The reserves of coal in seams upto a depth of 600 metres and thickness of 1.2 metres are placed at 85450 million tonnes out of which 24600 million tonnes belong to the "proved" category, 37885 million tonnes "indicated" category and the balance "inferred" reserves. Taking into consideration the growing importance of coal reserves, investigations were carried out to locate coal extending the depth of seams upto 1200 metres and the minimum thickness of the seam to 0.5 metre. The results indicated that the reserves could be augmented by 26200 million tonnes. Taking into account all these factors, the gross coal reserve of our country could be estimated at about 111,700 million tonnes. India's reserve of Prime Coking Coal, however, is limited to about 6000 million tonnes. About 16,500 million tonnes belong to the medium and semi and weekly coking varieties. The balance of about 89000 million tonnes belong to the non-coking variety. India is also endowed with a lignite deposit of about 2000 million tonnes. The location of the coal reserves are located in the areas starting from the Damodar valley in Bihar and West Bengal to Sone and Hasdeo Valleys in Madhya Pradesh, Wain Ganga and Wardha Valleys in Eastern Maharashtra and lower Godavari Valley in Andhra Pradesh. A major coal field near Talcher in Dhenkanal District of Orissa and a few smaller reserves in the North-Eastern has also been discovered. The lignite deposits are mainly concentrated in Neyveli in Tamil Nadu. Some explorable reserves have also been located in Gujarat and Rajasthan. The present production of coal and lignite in India is of the order of about 114 million tonnes and 5 million tonnes respectively. But it should be noted that the share of India's coal reserve is only about 1.5 per cent of the world's coal reserve.

Oil

The known reserves of oil in India is very small as compared to the reserves of coal. India has a number of sedimentary basins covering about 43 per cent of the land area and a sizeable area off-shore. Exploration for oil and gas in India was taken up in right earnestness with the setting up of the Oil and Natural Gas Commission (ONGC) in 1955. Extensive and intensive explorations carried out since then have yielded valuable results. The prognostic studies of available geological data indicate sizeable reserves of oil and gas amounting to 12 billion tonnes of oil. But the reliability of this data is not yet to be ascertained. In 1980, the net recoverable reserves of oil in the "definite" category was about 360 million tonnes and gas about 350 billion cu.m Bulk of the proved oil and gas reserves are located along the Gujarat and the Maharashtra coasts and the North-Eastern Region. About 16.2 million tonnes of crude oil and 3,853 million cu.m. of gas was produced in India, both from the on-shore and the off-shore structures of Bombay High during 1981-82.

Hydro

A systematic survey of hydro-electric resources carried out in the 1950s had placed the total firm hydro potential to be equivalent to an annual energy generation of 216 TWH (41155 MW at 60 per cent load factor). This survey is presently being updated by the Central Electricity Authority (CEA) on the basis of additional data that has become available since the earlier survey was conducted. The tentative results of the reassessment exercise indicate that the economically exploitable hydro electric potential is equivalent to about 400TWH of annual energy generation (75400 MW at 60 per cent load factor). The potential of schemes already developed constitutes about 11 per cent of the reassessed potential and schemes under construction would account for exploitation of an additional 8 per cent. Thus, India has still more than 80 per cent of its hydro potential untapped which is located mainly in the Himalayan areas of the Northern and North-Eastern Regions.

Uranium & thorium

India has only a modest reserve of uranium and thorium. The uranium resources are placed at 46,000 tonnes of U308 out of which about half is under reasonably well-assured category. The most important deposits of uranium ore is located in the Singhbhum region of Bihar. It has also thorium deposits estimated at 363,C00 tonnes of THO_2.

Non-commercial forms of energy

Firewood is the most important source of non-commercial fuel in India. It is obtained not only from forests but also from trees grown outside the forests i.e. on privately owned land. The following table gives an idea of growing stock estimates made by different agencies on various occasions :

TABLE 4

Estimate of Growing Stock in Forests

Item	As per Forest centenary publication 1961	As per Indian Forest Statistics 1969	As per the compilation for common wealth conference 1968	Tentativ estimate of Planning Commission in 1972
i. In million Cum	1126	2510	2611	1727
ii. In million tonnes*	901	2008	2089	1382

* Converted to tonnes assuming 1 tonne = 0.8 Cum

New and renewable sources of energy

In view of shortages of commercial energy, considerable attention has been paid for developing alternative sources of energy. They are (i) Solar Energy; (ii) Bio-gas; (iii) Geothermal Energy; (iv) Tidal Power, and (v) Wind Power.

Solar energy

India received substantial quantities of solar radiation and the number of sunny days in the year are quite high. The maximum, minimum and average solar radiation in some of the representative locations of India is indicated below:

Station	Solar radiation (in cals/per sq. cm/day)		
	Maximum	Minimum	Average
Madras	765	605	720
Bangalore	746	562	668
Bombay	795	542	701
Calcutta	817	501	681
Delhi	827	421	655
Srinagar	738	239	631

The minimum radiation occurs in December and for most locations it is about 500 cal. per sq.cm|day. The intensity and distribution of solar energy are favourable for its use in India.

Utilisation of solar energy is of great importance to India since it lies in a temperate climatic region of the world where sunlight is abundant for a major part of the year. An integrated programme of research, product development and demonstration projects involving several agencies has been undertaken to develop the technology of application of solar energy for various purposes. The research activities are being directed towards both solar thermal applications and direct conversion of solar energy into electricity. The integrated programme includes solar data collection, R&D activities in solar thermal areas such as solar water heaters, driers, power plants, water pumping, air-conditioning and refrigeration, and solar collector development and R&D activities in photo-voltaic areas for direct conversion of solar energy into electricity. Many of these projects have made significant progress and some projects like solar driers, solar milk driers, solar water heaters, solar kilns, solar power units etc. have been successfully completed. Further tests are being carried on these with a view to obtaining more operational data.

Bio-gas

This is Methan Fuel Gas produced by anerobic formentation of organic matter like animal dung, human night soil and vegetable wastes.

In India, it is assessed that the entire dung yield from cattle population if used for bio-gas production could yield energy equivalent to about 30 million tonnes of kerosene per annum. Initially the programme was undertaken for establishing small-sized plants to serve individual families. But this programme was not found adequate to harness the large bio-gas potential available in the country. Emphasis has, therefore, been laid for establishing large-sized community type bio-gas plants to accelerate the development of bio-gas potential in the country. A programme has been undertaken in the 6th Five Year Plan (1980—85) to establish 4 lakhs bio-gas plants.

In order to achieve the objectives of bio-gas development mentioned above, it is imperative that efforts are made through various R&D efforts to reduce cost by adopting new techniques and cheaper materials, designing simple type of machines which could be operated easily and there would be less operation and maintenance problems. Creating consciousness among the rural people by depicting its utility by arranging documentary film shows and actual demonstrations would also help in a long way in popularising bio-gas plans. For giving impetus to the programme sub-regional, regional and inter-regional co-operation is badly needed in the following fields :

(i) Technical assistance;
(ii) Exchange of experts to participate in the projects of other countries; and
(iii) Financial assistance from international agencies like U.N., IBRD, EEC, etc.

Geothermal energy

The activities in the geo-thermal field in India are mostly confined towards location of promising hydro-thermal reservoirs for power generation and other possible use of heat energy Geothermal manifestations in the form of hot springs occur in several regions in the country viz, North-Western Himalayas and along the West Coast Geo-thermal explorations are in progress in Puga in Jammu and Kashmir in Parbati Valley in Himachal Pradesh and the West Coast. These explorations would enable us to identify the areas where most promising geo-thermal reservations are located. Deep drilling would have to be undertaken at these locations to prove the extent of the reservoirs, exact flow and temperature conditions and other related characteristics, potential etc. Depending on the results of these studies a decisions on further course of action will be taken.

Tidal power

Though India has a very large coast line, there are only three locations where the tidal range is fairly high affording possibilities for tidal power generation. They are the gulf of Cambay and Kutch along the West Coast and the estuary of the Ganga (Sunderban area in West Bengal) along the East Coast. However, not much progress has been made in harnessing tidal power in our country.

Wind power

Some studies and investigations have been carried out to examine the possibilities of using wind energy in India. It has been found that the wind velocities in most parts of the country are low and are also not steady. As such the potential for utilisation of wind energy in India is very limited. Some R&D activtities are in progress to develop prototype wind mills for this purpose.

An outlay of Rs. 50 crores has been made in the Sixth Plan for the S&T Programme relating to new and renewable sources of energy in India.

Energy sector in the sixth plan

The Indian energy scene has been subjected to severe stress and strain during the last few years. But in spite of all hurdles and bottlenecks, the energy sector has made spectacular progress Recognising the importance of coal to the Indian economy in general and commercial energy in particular the Government of India entered the field of coal mining in 1956. The coal production which was about 34 million tonnes per annum at the beginning of the first Five-Year Plan (1951) had increased steadily to about 72 million tonnes per annum at the beginning of the Fourth Plan and to about 114 million tonnes during 1980-81. This achievement was possible mainly through the nationalisation of the coal industry in two stages. The coking coal mines were nationalised in 1972 as a first step The second step of nationalisation was taken up in 1973 when the rest of the coal mining industry was also nationalised. In November, 1975, all the coking and non-coking coal mines under the ownership of the Central Government were brought under a single holding company viz, Coal India Ltd. The target fixed for coal production during the Sixth Five Year Plan is 165 million tonnes. A total provision of Rs 2670 crores has been made for the development of coal and lignite sector in the Sixth Five Year Plan.

The achievements in the oil sector has been really spectacular. Intensive explorations undertaken under eigies of the Oil and Natural Gas Commission (ONGC), both on and off-shore have resulted in providing substantial reserves. As a result of relentless effort of the ONGC, the Oil India Limited, the Geological Survey of India and other related organizations, the proved reserves of crude oil measured from about 150 million tonnes in 1966 to about 370 million tonnes in 1980. The production of crude oil which was about 0.30 million tonnes in 1953-54 increased to 3.5 million tonnes in 1965-66 to about 10.5 million tonnes in 1980-81. The refinery capacity has also been simultaneously increased to match more or less the total requirements of the country. The target of crude oil production during the Sixth Plan period is proposed to be stepped up to 21.6 million tonnes, consisting of 8.4 million tonnes on-shore and 13.2 million tonnes off-shore. The refinery capacity is proposed to be expanded to 38 million by the end of the Plan period. The outlay earmarked for the oil sector is Rs. 4300 crores.

The electricity supply industry has also made phenomenal progress since the independence and the advent of the planned development. At the beginning of the 1st Plan, the installed generating capacity in the country was only 2300 MW and the energy generation was about 7500 million kwh per annum. In view of the critical role that electricity plays in the overall economy, considerable importance was given to power development in various Five Year Plans. One of the important measures taken in this direction is the participation of the Central Government in power generation programme. For this purpose two organisations were set up by the Government in the Central Sector viz., the National Thermal Power Corporation Ltd. (NTPC) and the National Hydro Electric Power Corporation Limited (NHPC). NTPC has been charged with the responsibilities of construction, operation and maintenance of large pithead super thermal power stations. NHPC would, similarly, be catering to the needs of developing large hydro-electric power stations. Presently the power systems in the various regions of the country are fairly well inter-linked. The Government is moving towards the formation of a unified national grid. Regional load Despatch Centres are also being established in the various regions to optimise power generation. These days power is also exchanged between different systems to mitigate shortages and to meet emergency situations. The target fixed for the Sixth Plan is 19666 MW consisting of 13,846 MW in thermal, 5130 MW in hydro and 690 MW in nuclear power. It is expected that the above installed generating capacity would make the total generating capacity to 51000 MW at the end of the 1st Plan, the installed generating capacity in of the Sixth Plan. The Plan also has made arrangements for complementary transmission and distribution facilities and Rural Electrification. An outlay of Rs. 19,265 crores has been provided for the development of the power sector in the country.

Energy strategy in the sixth plan

The strategy formulated for the development of the energy sector during the Sixth Five-Year Plan (1980-81 to 1984-85) can be broadly summarised as under :

(i) Accelerated development and exploitation of domestic resources;

(ii) Efficient management of demand for conventional energy, particularly oil;

(iii) Utmost importance to energy conservation in all sectors viz., domestic, industry, transport and other sectors;

(iv) Rapid development and exploitation of renewable sources of energy like biogas, solar energy etc. to meet the energy needs of the vast rural population;

(v) Development of energy forestry;

(vi) Intensification of R&D activities in the field of new and renewable sources of energy.

Long-term projection of commercial energy demand

In order to formulate a realistic strategy for meeting the long term energy needs of the country, the Government of India had set up a Working Group on Energy Policy in December, 1979 under the Chairmanship of Shri N. B. Prasad the then Secretary of the Department of Power which submitted its report in November, 1980. The Working Group have made projections of energy demand upto the end of the 20th century, corresponding to two alternative scenario :

(a) A reference level projection which has been based on past trend and assuming that no vigorous measures would be taken to manage or restrict the energy demand.

(b) An optimal level projections which has been arrived at by assuming that vigorous policy measures would be taken to manage the energy demand.

For the purpose of these projections, the growth of GDP has been assumed as 4.7 per cent upto 1982, 5.5 per cent from 1983 to 1988 and 6 per cent beyond 1988. According to these projections, the demands for coal, oil and electricity consumption are expected to increase by 2000 AD as under :

TABLF-5

Reference Level & Optimal Level Forecast Energy Demand (1982-2000)

(original Units)

	1982-83	1987-88	1992-93	2000-01
Coal (Million tonnes)	96 8	131.5	186 6	308 0
a. Reference Level	96.8	131.5	186 6	308 0
b. Optimal Level	96 8	128 0	170 0	265 0
Oil (Million tonnes)				
a. Reference Level	25 4	33 4	44.7	74 2
b. Optimal Level	25.2	30.4	37 6	54 8
Electricity (TWH)				
a. Reference Level	128.3	191 2	282 0	471 0
b. Optimal Level	128 3	173 6	241 0	395.1

As is clear from the above figures, the energy need by the end of the current century would be of stupendous nature. Maintaining the equilibrium between demand for and supply of energy needs would pose a serious challenge to the nation in the coming years. The energy planners of our country would, therefore, have to initiate action right now to formulate long term energy supply measures so that they are not caught napping at that time. ☐

National entrepreneurship development board set up

THE Government of India has constituted the National Entrepreneurship Development Board with the Union Minister of Industry as its Chairman. The Board consists of 20 members including the Chairman. The National Entrepreneurship Development Board will be the apex body for entrepreneurship development in the country and will determine policies for entrepreneurship development. In addition, it would devise and recommend to the Government, schemes for promotion of entrepreneurship for encouraging self-employment in the small scale industries sector and small business. The Board will also recommend suitable facilities and incentives for entrepreneurship training.

It has also the powers to appoint Committees for specific purposes and to invite persons to the meetings of the Board as and when considered necessary. The term of the Board is for a period of two years.

Regional disparities in India

P. S. Mundinamani

For solving regional disparity problem, the author says that all backward states should muster their efforts towards local or regional planning. There should be separate outlay for the development of backward areas and proper utilisation of central assistance.

IN RECENT YEARS most of the underdeveloped countries of the world have shown keen interest in solving the problem of regional economic disparities. For achieving this, they have adopted planning of one type or the other. But the problem of regional disparities is not confined to the underdeveloped countries alone. It has persisted in some of the highly-developed countries also. It is very apt to quote Singh who states that, "Economic inequalities between the northern and southern part of Italy are too well known. Several regions of the United Kingdom, Scotland and Wales for example, are suffering from stagnation and unemployment due to shifts in the industrial location. France is worried for a long time about the over concentration of population and industry in the Paris region." (Ajit Kumar Singh, "Patterns of Regional Development.")

But the extent of the problem is more acute and widening from plan to plan in all the developing countries. Myrdal rightly observes: "there is a tendency inherent in the free play of market forces to create regional inequalities and that this tendency becomes the more dominant the poorer a country is". Gunnar Myrdal, ("Economic Theory and Underdeveloped Regions"). In India the problem of regional imbalance is more serious in nature. It projects a picture of extreme regional variations in terms of almost all indicators of economic growth, such as variations in consumption of electricity, railway and road length, medical and educational facilities, electrified pumpsets, percentage of workers in manufacturing industries. Broadly speaking some states are economically backward and some are relatively advanced. Further, within the states, some regions are very backward while others are highly advanced. For instance it was found in '. . .out of 19 districts in Karnataka, eight districts belong to the lowest level of development, that is, backward districts, six districts belong to second level of development, that is, developing districts. Four districts belong to the third level of development, that is, the developed districts and only one district is identified as having highest level of development' This clearly shows that within the state some regions are highly developed while other are poorly developed.

Regional disparity

Regional disparity may be natural due to unequal natural endowments like variation in soil fertility, rainfall, temperature etc., or man-made in the sense of neglect of some pockets and more preference of other regions for investment and development effort. In this paper attention is focussed on the second aspect. Due to the widening inter-regional economic disparities, the people in the advanced regions are getting more benefits than those who are residing in less advanced regions. As a result of this, unemployment poverty, low per-capita income, low yield per hectare etc. are more common phenomena and conditions of the people are deteriorating every year.

Both the central and state Governments have taken various steps for eradicating economic regional disparities among the states and within the states. The main objectives of our plans are to correct the regional imbalances in the country. But the first plan did not take up the issue of balanced regional development specifically. It was during the formulation of the second plan that concept of balanced regional development emerged clearly as a goal of development planning. Further it was observed that in the Plan Report: "in any comprehensive plan of development, it is axiomatic that the special needs of the less developed areas should receive due attention. The pattern of investment must be so devised as to lead to balanced regional development." (Planning Commission : Second Plan Draft. 1955. p 19.) The important steps taken during the plans were, viz., (1) Backwardness of a state was taken into account as one of the factors in the location of central sector industries or projects, (2) weightage was given for less advanced states in the allocation of central assistance, (3) Special aid was made available to less advanced states or areas. Further, during the Fourth and Fifth Plan various measures were taken by the planners, such as Small Farmers Development Agency, Marginal Farmers and Agriculture Labour Agency, Hill Area Development Programme, Drought Prone Areas Programme, etc. Above all, various committees and commissions have been set up by the central government for solving the problem. For instance the Planning Commission appointed the Pande Working Committee in 1968, which laid down the criteria for identifying the backwardness of states and regions. Apart from the central government measures, state governments have also shown a keen interest in solving the inter-district regional disparities. For example, the U P. Government's Fourth Five Year Plan observed: "it was the accepted policy of the state government that the regional disparities within the state should be removed. More specifically it was said that one of the primary objectives of the state plan is to reduce disparities in social services and economic infrastructure between backward and developed areas." (U.P. Government "Draft Fourth Five Year Plan." p. 54.) In this way various efforts have been made by both central and state governments for reducing the regional imbalances. These efforts have hardly made an effective impact in solving the problems: on the contrary some negative effect on the economy are observed Sixth Plan draft clearly states that. 'our experience with large industrial projects in backward areas shows that their spread effects are low and the surrounding areas continue to remain poor and under-developed In fact such development, by creating a dualistic economic structure, may pose more problems than it solves" (Government of India. Planning Commission "Draft Sixth Five Year Plan (1978—83)" Revised. p. 195)

Identifying backward areas

In this paper an attempt is being made to identify backward states and possible measures to balance regional development are suggested. For the purpose of convenience each state is taken as a region, because it helps to build integrated development index with the available state-wise data. With the help of newly collected secondary data, a scheme to identify the levels of development is worked-out. In this connection an integrated index of general development is constructed on a comprehensive basis by taking into account physical indicators of development (see Table II for details).

TABLE I

Development Indicators	Weightage
1. Industry	24
2. Transport	19
3 Irrigation	15
4. Power	13
5. Banking	12
6. Education	9
7. Medical & Health	6
8 I P Sets	2

These selected indicators (Table I) are taken as the vital growth components of the economy and are quantitatively measurable. As regards the weights assigned to various indicators mentioned above, they are in accordance with the plan priorities adopted in various plans. Three levels of development have been determined on the basis of the considerations viz. Developed, Developing and Backward. The detailed study of these will give a clear picture of regional disparities in India among the various States.

Seventeen states of the Indian union are selected for this study. This selection is mainly on the basis of availability of information. The remaining five states are left out because of non-availability of data. Of these selected states, five states are identified as the developed ones and showing satisfactory position in respect of selected indicators. Six states belong to the second level of development, which are usually categorised in the developing states. The remaining states belong to the lowest level of development. This reveals that only a few states are developed and majority of the states are backward (see Table II). Further, the gap between these states, having all the necessary infrastructure facilities, are advancing at a faster rate than the backward states, which lack these facilities. Thus on the one hand, we have regional imbalance problem and on the other, the gap between Advanced and Backward States is widening.

TABLE II

States	Index of Development
I. *Developed*	
(1) Kerala	807
(2) Tamil Nadu	423
(3) Haryana	340
(4) Punjab	306
(5) West Bengal	305
II. *Developing*	
(6) Bihar	283
(7) Maharashtra	266
(8) Jammu & Kashmir	256
(9) Uttar Pradesh	250
(10) Andhra Pradesh	246
(11) Karnataka	241
III. *Backward*	
(12) Orissa	203
(13) Gujarat	198
(14) Assam	193
(15) Himachal Pradesh	189
(16) Madhya Pradesh	148
(17) Rajasthan	134

From the table, it is clear that five states viz., Kerala, Tamil Nadu, Haryana, Punjab and West Bengal are developed states and the remaining states are developing and backward states.

Main causes

The main causes for economic backwardness and regional imbalances are lack of irrigation, employment opportunities in the industrial sector, transportation, power, education and health facilities. Broadly, these states have not properly exploited the water resources for development of agriculture and necessary infrastructure for development of industrial sector. For example, the highest percentage of irrigation is in Punjab (75.1 per cent) and lowest is in Madhya Pradesh (9.6 per cent). Above all, these states are also lagging in using other inputs for development of agriculture. For example, in Punjab the per hectare consumption of fertilizer is 306 Kgs. whereas in Rajasthan, Madhya Pradesh and Orissa the per hectare consumption of fertilizer is 27 Kgs., 31 Kgs. and 42 Kgs. respectively. As a result, agriculture is highly advanced in Punjab and is backward in Madhya Pradesh, Rajasthan and Orissa. The main reason for all this may be variations in investment made by different state governments on agriculture. For instance, the per capita plan outlay in Punjab on agriculture was Rs. 64 during the first plan period which increased to Rs. 150 during the Fifth plan period, whereas in Orissa it was Rs. 4 and Rs. 72 during the said period. Further, these states have failed to develop proper infrastructure facilities, such as transportation, electricity, banking etc., for development of industries. The road length per 100 Sq. Kilometres in Kerala is 301 KMs., whereas it is only 13 Kilometres in Rajasthan. Same is true in the case of generation and consumption of electricity. The inter-regional disparity in the level of industrialisation is revealed by the difference in the number of factory workers per thousand population as shown in Table III. Thus the lack of agricultural and industrial development caused the backwardness in these states. Therefore, for solving the problem of regional disparity, there is a great need for strengthening of these two sectors in the backward states. Active development of these two sectors will definitely reduce regional imbalance to a certain extent. But total balance cannot be achieved in a short period. Thus for reducing regional disparities in the country, agriculture and industry should be developed along with basic infrastructure facilities in the backward region.

TABLE III
SELECTED ECONOMIC INDICATORS

States	Percentage of Literacy	Population per Bank Offices in thousands	Percentage of net irrigated area to net cultivated area	Factory employment per 1000 population	Percentage of electrified villages	Percentage of pumpsets energised to total	Road length per 100 Sq. Km. (in Km.)	Hospital beds per 10,000 population
	(1981)	(1980)	(1976-77)	(1976-77)	(1976-77)	(1976-77)	(1976-77)	(1976-77)
(1) Kerala	69.1	10	10.4	11.2	95.6	1.72	301	8.7
(2) Tamil Nadu	45.8	15	42.8	11.2	98.6	26 66	71	8 8
(3) Haryana	35.8	13	48 3	9 6	100.0	5.10	33	5 8
(4) Punjab	40.7	9	75.1	14 2	29.5	5 24	44	5 8
(5) West Bengal	40.9	22	24.0	17 6	23.8	0 36	64	7 6
(6) Bihar	26.0	30	31 7	5.3	26 9	4 23	69	3 5
(7) Maharashtra	47.4	15	9 9	19 1	56 5	14.78	34	7.1
(8) Jammu & Kashmir	26.17	12	44.2	3 0	43.5	0.04	46	7.2
(9) Uttar Pradesh	27.4	24	45.8	4.8	29 2	9 36	42	3.9
(10) Andhra Pradesh	29.9	18	30.8	7.9	49 6	10 62	33	6 3
(11) Karnataka	38.4	11	13.2	10.5	54.8	8.07	43	8.1
(12) Orissa	34.1	27	16.5	3.2	27.8	0.18	37	4.0
(13) Gujarat	43.7	12	14.6	17.3	38.9	4.38	23	5.4
(14) Assam	29.1	31	22.5	4.2	9.1	0 04	40	3.5
(15) Himachal Pradesh	41.9	11	16.1	4 1	42 8	0 04	25	9.3
(16) Madhya Pradesh	27.8	23	9.6	5.4	19 5	5.27	20	3.2
(17) Rajasthan	24.1	18	16.9	3.6	25.1	3 37	13	5.2
All India	**34.8**		**24 2**	9 5	35 2		36	**5 8**

Source : Times of India Directory, 1982
Manorama Year Book, 1981

Rural economy

Ours is a rural economy, where a large number of people depend on agriculture. But unfortunately performance of the agricultural sector, particularly in backward states, is very poor. In these areas highest priority should be given for minor irrigation works and for exploiting water resources. For achieving this, every year ground water surveys, soil testing, land levelling, consolidation works should be a regular feature. Minor irrigation works, such as tanks, ponds, wells should be developed at a faster rate in order to avoid the wastage of rain water in the backward states. For example, in Orissa more than two-fifths of the total rain water passes to the sea. If this is promoted, the slogan "Every farm should have its own well and pumpset" would become a reality. This can be achieved by establishing the following organizational facilities, (i) co-operative pump set unions, (ii) organization of mobile pump-set unions, (iii) State and community tube-wells, (iv) buying of pumpsets by individual farm families. Another alternative suggestion for increasing irrigation facilities is to develop local irrigation techniques, such as hand pump, irrigation windmill, etc. In recent years such techniques have been developed in the country by local people. For speedy development of irrigation facilities further, government should give at least 50 per cent subsidy for digging of wells and for purchasing of pumpsets. Of course, sixth plan already offered a subsidy of 25 to 33 per cent on the capital cost of a ground water structure. Along with these measures, extension, subsidy for inputs, marketing, training credit facilities should be given and state governments should establish regional agricultural research stations and fertiliser plants in their respective states. For achieving all these things, state governments in these areas should invest more in agricultural sector.

Developing industries

Side by side, large and small scale industries should be developed in these states (depending upon the local conditions). As far as possible, small scale industries should be promoted because large industries require huge capital and sufficient raw materials. Unfortunately, the existing large scale industries are not functioning well in the backward states.

Therefore in backward states small scale industries viz., forest based, agro-based industries should be set up. The prospects of establishing forest based, livestock based and agro-based industries in Madhya Pradesh, Uttar Pradesh, Himachal Pradesh have proved extremely promising. In Rajasthan, Orissa, Jammu & Kashmir there is great scope for developing stone cutting, leather tanning, sheep rearing, carpet-making, handloom and handicraft industries. In Andhra Pradesh, there is great scope for rice husking and food processing industries. In Assam one can establish large number of small tea-dust processing and juice making industries. After developing these industries in backward developing states, if there is any prospect for developing large-scale industries, that can also be developed. Large scale industries, such as steel plant in Karnataka and A.P., Cotton textile industries in Gujarat, Maharashtra and Karnataka, Oil processing industries in Assam may be promoted. For developing these industries, state governments should extend all necessary facilities, such as technical facilities, power, built-up sheds, water land, raw materials, trained labourers, incentives, transportation etc. to the entrepreneurs. Further, in order to ensure wider dispersal of industries, the focus may be given to what may be described as second line of towns rather than on the most backward regions. In fact, various growth areas have been selected for development in the country. But in view of limited resources, it is necessary that special attention should be paid to three to four areas located close to economically and industrially developed towns in which medical, educational, technical, banking, training, transportation facilities are available. In such selected areas, new industrial townships should be developed and this calls for a co-ordinated effort not only by the Industrial Development Board, but also by other organizations like the, Housing Board, P.W.D., Electricity Board, Urban Development Corporation, City Corporation and Banking Institutions. Due attention should be given to the availability of local resources and the absorption of local manpower. The Governments should give preference only to local entrepreneurs. It is observed that in most of the backward areas, outside capitalists are dominating and they are getting concessional finance from public sector financial institutions. Though there is nothing inherently wrong in this, there is a fear that the outsiders tend to curb the initiative and innovative spirit of the local entrepreneurs.

For solving the regional disparity problem, all backward states should muster their efforts towards local or regional planning. There should be separate outlays for the development of backward areas and proper utilization of central assistance. ☐

Record throughput in Madras Refineries

The Madras Refineries Limited achieved highest crude throughput of 2.858 million tonnes in 1982-83. This is the highest ever since 1969. Regarding physical performances the Refineries has achieved a sales of Rs. 719 crores during 1982-83. The profit before tax was Rs. 11.54 crores and the net profit Rs. 9.50 crores.

A second Refinery with 2.8 million tonnes capacity is under construction at the cost of Rs. 158 crores. It can refine any type of crude from that of Bombay High to Iranian Crude. The first phase would be ready by March 1984 and the second by October 1984.

The Refinery has at present L.P.G. storage capacity of 500 tonnes and construction work in going on for increasing storages capacity.

Taking into account the acute water shortage, Madras Refineries has taken up closed circuit operations to ensure minimum use of water.

D. Janaki,
Senior Correspondent,
Madras.

Guidelines on National Rural Employment Programme revised

M. Yunus Siddiqui
Correspondent, Yojana

THE CENTRE has revised its guidelines on the National Rural Employment Programme (NREP) and modified some provisions therein.

These are :

(i) A ceiling has been fixed on the carry over funds from the previous financial years under this programme. The ceiling will, accordingly, be 25 per cent of the allocation (both Central and State share) to the extent these are over the above limit. The allocation for the programme (both Central and State share) for 1983-84 will be reduced and to that extent less Central assistance will be released during 1983-84;

(ii) In case of better performance in any State additional Central assistance can be considered for the State subject to the availability of funds and the provisions of matching share by the State Government. This additional Central assistance will also be available to those States where reduction in allocation takes place as a result of excessive carry over funds as on April 1, 1983. If the performance in these States improve during the current year and there is a better utilisation of funds and greater generation of mandays, these States can also be considered for further Central assistance subject to matching provision being made by the State Government;

(iii) It has now been decided that the total earmarked funds for social forestry for the year will be released to the States in 1983-84 as part of the first instalment itself to facilitate utilisation of these funds during the peak season of plantation which generally falls in the first two quarters of years. This is intended to facilitate better planning and implementation of Social Forestry Programme. Earlier funds for social forestry were released in two instalments; and

(iv) It has also now been decided that from the current financial year (1983-84), the Central assistance will be released to the States without any deduction on account of the cost of foodgrains released to the States. The State Government on the basis of the release orders issued by the Ministry of Rural Development will deposit cost of foodgrains with the Food Corporation of India and take delivery of the foodgrains. During 1982-83, the cost of foodgrains released to the States was deducted at the time of the release of the instalment of Central assistance. This procedure has now been changed.

Employment generation

According to the Planning Commission, the employment generation of 322.23 million mandays is targetted for the year 1983-84. The actual generation during this period amounts to 32.94 million mandays which accounts for 10.22 per cent of the total targets. Of this employment generated for Scheduled Castes and Scheduled Tribes works to 12.6 million and others 17.13 million. It may be noted that the mandays of employment generated for Scheduled Castes and Scheduled Tribes accounts for 38 per cent of the total generation of the employment. The position of generation of mandays of the employment would, further, improve when information for the period ending June, 1983 was available from Andhra Pradesh, Bihar, Assam, Karnataka, Kerala and Orissa, Goa, Daman and Diu.

The Planning Commission has noted that a number of States have got substantial unutilized funds which are spilling over from the earlier financial years. It is seized with this problem and has decided to reduce the current year allocation to the extent of unutilized balance over and above 25 per cent of the allocation which would be deemed to be in the pipeline.

It has rightly been felt that one of the reasons for the unutilized balance is inadequacy of staff for this programme. Government of India has, accordingly, already sanctioned some posts at the district and block level under the Central Scheme for strengthening the administration. Besides, the Centre is also considering a proposal to allow 7½ per cent of the allocation as expenditure on the staff.

Availability and utilisation of funds

In the first quarter of 1983-84, Rs. 52.98 crores were released to 10 States—Assam, Bihar, Gujarat, Jammu & Kashmir, Kerala, Punjab, Rajasthan, Tamil Nadu, Tripura and Uttar Pradesh and three Union Territories of Goa, Daman and Diu, Lakshadweep and Pondicherry. The utilisation of funds has been of the order of Rs. 26.93 crores which have been reported by eight States and three Union Territories. Besides an allocation of Rs. 398.94 crores for NREP in 1983-84, the States have an unspent balance of Rs. 175 crores spilling over from 1982-83, thus making a total of Rs. 573.94 crores. The funds utilised so far in the current year, under the programme, amount to Rs. 26.92 crores which includes the value of food grains as well. This comes to 50.82 per cent of the funds released. This percentage would, however, go up when reports from three States of Assam, Kerala and Tripura are received. In case of two States of Jammu & Kashmir and Rajasthan, the information furnished relates to April and May 1983 respectively.

Utilisation of foodgrains

During the current financial year, the foodgrains allocated to the States and Union Territories add up to 32.22 lakh tonnes. The foodgrains released during the first and second quarter of the current year is 0.46 lakh tonnes. The recipient States are Andhra Pradesh, Assam, Haryana, Himachal Pradesh, Jammu & Kashmir, Kerala, Madya Pradesh, Rajasthan, Sikkim, Tamil Nadu and Tripura, and the Union Territories of Arunachal Pradesh, Goa, Daman and Diu and Lakshadweep. The utilisation reported adds upto 0.10 lakh tonnes in respect of Assam, Gujarat, Jammu & Kashmir, Punjab, Rajasthan, Sikkim, Tamil Nadu and the Union Territories of Lakshadweep and Pondicherry. The information from other States is still awaited. The percentage of utilisation, which is placed at 22.53 per cent, would improve considerably when the information from all the States was available.

Background

The National Rural Employment Programme came into operation in October, 1980 and till the end of March, 1981, it was entirely funded by the Central Government. The programme was made a part of the Sixth Plan from 1981-82 and since then implemented on 50 : 50 (fifty-fifty) sharing basis between the Centre and the States. The total provision made for 1983-84 is Rs. 398.94 crores

National Rural Development Fund

SECTION 35CC of the Income-tax Act, provides for a deduction in the computation of the taxable profits of the expenditure incurred by a company or a cooperative society on a programme of rural development approved by the prescribed authority. Wtih a view to securing that this tax concession is allowed only in respect of expenditure incurred on rural development programmes of high priority, the Finance Act, 1983 has amended the Income-tax Act to provide that the prescribed authority shall not approve any programme of rural development unless the programme falls within any such class or category of programmes as may be specified by the Central Government in this behalf. The classes or categories of programmes to be specified for this purpose are currently under consideration and Government's decision in this regard will be announced soon.

The Finance Act, 1983 has also amended the relevant provisions of the Income-tax Act relating to deduction in respect of donations made to approved institutions, etc. for purposes of programmes of rural development. Under the provisions as amended, the scope of the deductions has been restricted to donations made to programmes of rural development which have been approved by the prescribed authority before March 1, 1983. Further, in cases where the donation is made after February 28, 1983, deduction will not be allowed unless such an approved programme of rural development involves work by way of construction of any building or other structure and such work has also commenced before March 1, 1983.

As it is not the intention of the Government that deserving rural development programmes should be deprived of financial support, the Finance Act, 1983 has made a new provision for deduction of donations made by taxpayers to a rural development fund to be set up and notified by the Central Government in this behalf. A National Rural Development Fund will soon be set up by the Government for the purposes of this provision. Donors to this fund may indicate their preference for area, locality and the rural development programme for which their donation is to be used, as also the voluntary agency through which the programme may be implemented, and their wishes in this regard will be respected as far as possible.

Fields in which the achievement ranged from 4 to 2.2 per cent of the annual target are :—Rehabilitation of bonded labour, drinking water supply for villages, help to slum population, energising of pumping sets and installation of bio-gas plants. Progress in the distribution of surplus land, help to the Scheduled Caste/Scheduled Tribe families, housing for economically weaker sections of society and sterilisation for family welfare was from 1.8 to 0.6 per cent only.

While Kerala led in the IRDP and in providing help to the Scheduled Tribes, Himachal Pradesh topped in NREP, energisation of pumping sets for irrigation and installation of bio-gas plants. Punjab, Haryana, Uttar Pradesh, Bihar and Tamil Nadu, however, were at the bottom in the implementation of IRDP. Only 10 families benefited from it in Tamil Nadu, against the annual target of 226,800. The achievement of Haryana in the implementation of NREP was nil.

Economic profile of slum-dwellers: Some policy issues

Dr Ashok Kumar

In developing stage slums play a functional role in the city while in developed stage it is a sign of decay. If some of the basic problems of slum dwellers are taken care they might be able to contribute to a healthy growth of cities. These require concerted efforts by Government and voluntary agencies to oversee that benefits reach genuine dwellers.

MOST OF THE STUDIES on slums have pointed out that slum-dwellers with distinct identifiable characteristics mainly poverty are disjointed from the rest of the society, but one should not fail to ignore uncontrolled migration, unbalanced distribution of income, inadequate community facilities, lack of urban planning, absence of community participation and ineffective legal measures as some of the most glaring reasons for providing enough ground to aggravate the problem of slums. The situation of slums can not be understood completely unless it is appreciated that in developing stage slums play functional role in the city while in developed stage it (slum) is a sign of decay. If some of the basic problems of slum dwellers are taken care they might be able to contribute to healthy growth of the city.

In this background the present paper attempts to draw an economic profile of slum-dwellers with a view to explore some ways and means to improve their economic status.

The study was conducted in Lucknow city. The city was abode of Nawabs well known for its spaces, its picturesque settings, its gardens and healthy organisations. Like many other studies of slums the first problem to be tackled was that of proper sampling frame. Though the Municipal Corporation of Lucknow has useful information such as 32 Wards comprising 184 localities with an average of 250 households in each locality and 457 slum pockets spread in different localities, the data on size of population or number of households in these slums was not available. A list of 103 slums approved by Lucknow Development Authority in February 1975 was divided into two parts—One having slums on outskirts and the other within the city. From each list 20 slums (8 in outskirts and 12 within the city) representing slums of Lucknow constituted study area. Since data regarding population or households or geographical boundaries of slums were not available the decision on the fraction of the sample could not be taken. However, it was decided to do on-the-spot random selection of households from the selected sample. To avoid bias a cluster consisting of 20 to 30 houses was formed and in the slums of outskirts every fifth house was taken for interview while in the slums within the city every tenth house in each cluster was sampled. This decision was taken in view of the fact that the slums within the city were densely populated and such an approach was likely to yield almost same number of households in both types of slum. Thus, finally 1021 households (508 in outskirts and 513 within the city) were covered. The field-work, using a pretested interview schedule was started in third week of June 1979 and was completed by the end of the year. After final checking and editing 6 schedules were dropped and tabulation of only 1015 schedules was undertaken.

General characteristics of the sample

In all information regarding demographic and social characteristics was collected for 5105 persons. As many as 46 per cent of the slum-dwellers were recorded as illiterate and 34 per cent schooling upto Primary standard. All religious and caste groups were found to be living in slums. Of 61 per cent Hindus, 25 per cent and 47 per cent belonged to high and middle caste Hindus respectively. Twenty eight per cent of the Hindus were found to be belonging to scheduled castes. Nearly, 35 per cent of the slum dwellers were Muslims and the remaining 4 per cent belonged to religion other than Hindu or Muslim. On an average a family in slum has been found to be spending Rs. 336 in a month while it has been earning Rs. 350. An average slum-dweller was 23 years old and the mean age at marriage for male and female worked out to be 21 years and 16 years respectively. An average family had 5 members and more than two-thirds of the couples were non-users of family planning.

Findings

In order to understand economic life of slum-dwellers the analysis of data pertaining to occupational structure, income, expenditure, earning members in family and working hours has been undertaken. The paper also attempts to find out satisfaction of the slum-dwellers with their occupation and also their future plan to raise economic status of the family.

Occupational Structure

Of the total slum population (5105) surveyed 27 per cent was found to be economically active. After excluding children (below 15 years) the ratio of workers to total population worked out to be 48.4 per cent (for male 84.3 per cent and for female 14.9 per cent).

The occupational structure of the head of 1015 households covered in the study brought out that the single largest group was of peon|servant (17 per cent) followed by unskilled worker (14 per cent). Thirteen per cent of the households were engaged in clerical jobs. More than a half of the unskilled workers were earning less than Rs. 200 in a month while for all working persons such proportion was only 20 per cent.

Income and expenditure

Half of the families had monthly average income of Rs. 200 to 399. While 3 per cent were classified as families of income of less than rupees one hundred, 6 per cent were found to be earning more than Rs. 700 in a month. The average monthly income of a family in slums (Rs. 350) means that an average slum-dweller had 2.33 per day to manage food, cloth and shelter. But this, by no standard, is indication of urban poverty because in other cities such as Hyderabad, Madras, Delhi and Bombay the income of slum-dwellers has been much more than that of Lucknow city.

The expenditure was found to be within the range of income for the sample as a whole but lower the income higher was the tendency of spending beyond the actual income. While 20 per cent of those whose monthly earning was less than Rs. 100 were spending more than 100; the similar ratio in case of families having income of Rs. 600—699 per month was only 9. On an average a slum family was saving Rs. 14 in a month.

Of the monthly expenditure (Rs. 336) an average slum family was spending Rs. 180 on food, Rs. 16 on clothing and Rs. 18 on housing. The expenditure of remaining Rs. 112 in a month on the items other than the basic needs projects lavishness of slum-dwellers. But this statement cannot be generalised because large families (more than 5 members) were spending nearly Rs 270 in a month to meet basic needs of family.

As for an average expenditure on food, cloth and shelter in relation to size of family, taking Rs. 69 as a standard monthly expenditure on food of one person it becomes evident that larger the family the lesser is per capita expenditure on food ; which might be causing undernourishment. The monthly per capita expenditure on food in families with 8 and more members was only Rs. 30.

Coming to the expenditure on clothing and housing it is noteworthy to point out that housing in slums is exceptionally inexpensive and probably this is the reasons for many families (though economically capable to spend more money on housing) to opt for slums. As discussed earlier, on an average, a family in slum was spending Rs. 18 in a month on housing. The inexpensive housing appears to be only reason of spending Rs. 112 in a month on the items other than the basic needs. There was not much variation in expenditure on clothing by size of family.

Earning Members

Seventy per cent of the families had only one earning member while in 19 per cent families two members were contributing to family earnings. The average number of earning member per family worked out to be 1.4. Among those 1 per cent families where none of the members was earning the monthly average expenditure was around Rs. 271. Though an increase in expenditure was observed to be associated with increase in earning members, the expenditure in the families with two earning members does not become double rather it increases marginally.

Number of working hours

On an average each slum family was working nearly 11 hours in a day and taking average number of working members (1.4) the average working hours for each working person worked out to be 8.1 in a day. Since most of the workers were salaried employees 8 hours duty in a day appears to be quite reasonable.

The analysis of working hours by number of earning members brings out that taking 9.3 as standard working hours for each working person, the additional working person does not mean proportional increase in working hours. This is a clear indication of underemployment and that is why the increase in earning members does not find to be enhancing family income in the same proportion.

Satisfaction with the present occupation

Nearly 70 per cent were satisfied with their present occupation. The dissatisfaction was maximum (49 per cent) among unskilled workers. The chi-square test supports the hypothesis that in comparison to non-service class the job satisfaction is higher among service class, out at the same time they were not specific about the new job they would like to take up.

A plausible approach

The problem of slum dwellers in Lucknow city is not of unemployment rather underemployment is adversely affecting the economic status of the slum families. There is, therefore, urgent need to draw and implement realistic plan of vocational guidance and counselling. Most of the slum dwellers have preference for government or private service and efforts should be made to understand causes of such preference. The slum dwellers should be demotivated for government/private service. This is, however, possible only when they are informed about equally attractive alternatives. Four conditions, namely (i) motivation to work (ii) know-how (iii) capital, and (iv) outlet are essential for exploring solutions for curbing underemployment. As far as first part is concerned almost every body wants to have full time employment. Regarding second condition of know-how some efforts are needed. The formal way of teaching is costly as well as a slow process. Those who are educated and know certain skills and trade should come forward to impart knowledge to others. This proposition looks to be difficult because people are prepared to receive but not prepared to give. At such stage policy interventions are needed. The system of education and more so technical education should be modified. The third factor capital in terms of National Income is limited and therefore there are two alternatives : (i) create a few jobs at a high level of capitalisation or (ii) create many jobs at a relatively low level of capitalisation. In fact, it is related with the policy of technology. There are examples, such as Japan, Korea, Taiwan etc., where by adopting proper technology people have achieved a high level of employment and production with very modest capital and equipment. The problem of underemployment in slums is solvable by developing such agro--industrial structure which ensures full utilisation of labour force for providing most of their basic requirements themselves. The fourth condition of outlet which means that after some thing is produced there must be some body who wants to purchase it. Thus the condition of outlet is very much interlinked with the choice of technology.

To start with, the policies intended to check underemployment in slum areas may comprise ways and means of providing a suitable marketing infrastructure whereby the sale of produced goods may be increased and profitably marketed. The increase in production will create several avenues of full time employment. Considering both the geographical location and background of slum dwellers of Lucknow city it is suggested that poultry farming, cooperative dairy farming, work-cum-production centres for self-employment in trades like chicken work, match making, broomstick making etc. should be encouraged. The government, voluntary bodies such as Rotary Club, Jaycee Club and loan lending organisations should come forward for not only arranging capital on easy terms and conditions but also to watch that benefits reach genuine people.

All time high record production of wheat

WHEAT PRODUCTION in 1982-83 has touched a new peak of 42.5 million tonnes registering an increase of 12.4 per cent over the previous highest production of 37.8 million tonnes in 1981-82. At this level not only has the Plan target of wheat for 1982-83 has been exceeded but the target of 1983-84 achieved in 1982-83 itself.

Out of the total increase of 47 lakh tonnes in wheat production in 1982-83, Uttar Pradesh alone accounts for an increase of 24 lakh tonnes. Rajasthan and Punjab have also achieved substantial increases in production over the previous year.

National Council for S & T Communication Reconstituted

THE National Council for Science and Technology Communication has been reconstituted with immediate effect. The Minister of State for Science and Technology will be its Chairman.

Besides Government officials the 42-member Council has on its Board representatives from voluntary agencies, science journalists and film producers.

You and your health

Arthritis: Facts and fads

Dr. A. N. Malaviya

People are often confused over the terms rheumatism, rheumatic pains and arthritis. The word arthritis is comparable to fever or any other similar symptom the cause of which is to be found out by the doctor. In the series 'You and your health' the author discusses different types of arthritis, fads and fiction and cure of the disease.

THE WORD ARTHRITIS by itself does not define any specific disease. It simply means that there is a joint disease without indicating the name, nature or the type of disease. In other words it just indicates a manifestation of a large number of diseases which can involve joints. Thus, the word arthritis is comparable to 'fever' or any other similar symptom the cause of which is to be found out by the doctor. The use of pseudomedical terms like "rheumatism" or "rheumatic pains" must be discouraged because they do not mean anything and cause unnecessary confusion. "Doctor I have pain and discomfort in my joint" is a much better way of expressing your complaint than "Oh, I have arthritis" or "I have rheumatism".

Arthritis in different age groups

A widely prevalent misbelief is that arthritis occurs only in old age. In fact, more severe and incapacitating varieties of the diseases of joints occur in young children, young adults or middle age persons too. These include rheumatoid arthritis, juvenile chronic arthritis and seronegative spondarthritides. In comparison to these arthritides the arthritis of old age (i.e. osteoarthritis) would be considered mild and easily controllable.

Considering the different types of arthritides in different age-groups, in children arthritis due to injuries is common. Often the injury might be forgotten, only the joint pain may be the symptom. One must be aware of this for making a correct diagnosis. "Rheumatic Fever" is another common condition in children where joints are involved frequently and heart can also get involved. But, the commonest and most severe form of arthritis in children is called "juvenile chronic polyarthritis". Some people also call it juvenile rheumatoid arthritis but the former term is preferable. There are several varieties of this disease. It is necessary to characterize the subcategory in any given patient correctly because the treatment differs from one category to the other. Incorrectly treated children develop crippling disease with severe growth retardation and general ill health. In spite of the fact that this disease is the commonest arthritis in children there is very little awareness about it in lay public as well as among doctors.

Two serious forms of arthritides

In the young and middle aged, two of the most serious and severe forms of arthritides occur. One of these is three times more common in women. It is called rheumatoid arthritis. It is actually a systemic disease with weakness; anaemia, weight loss etc. In addition, it produces a crippling arthritis of small joints of both hands simultaneously (symmetrical involvement is characteristic), both wrists, both elbows, shoulders, knees, ankles and feet. Fortunately, the most severe form of this disease is not very common in India. The second disease called seronegative spondarthritis is 16 times more common in young men, quite often with a family history of the same disease. Pain in lower back, stiffness in bending forward, symptoms worse at night, involvement of joints predominantly below waist and heel pain are important features of this disease. Some of these persons develop "bamboo-spine". Several other organs of the body may get involved. Majority of these patients belong to the tissue type HLA B27.

Tuberculosis of joints is also a common joint disease in young adults. Usually single joint is involved. Features like night sweats, weight loss etc. give away the diagnosis.

In so-called old-age arthritis called osteoarthritis, the important thing to remember is that it can start as early as 30 years of age. This is especially so in the joints which are excessively, strenuously and vigorously used e.g. nodding and head shaking among upper and executive class, vigorous competitive sports, unnatural and unphysiological postures like squatting on Indian style lavatory, sitting cross-legged, using high pillows, carrying heavy weights on the head or back, 'cracking' knuckles frequently etc. Also, osteoarthritis occurs early in a joint earlier involved in injury or any other disease. The common sites of involvement include neck, shoulders, small joints of the hands, knees and lower back. Often gross crackling sounds are audible on moving the involved joints. There is no 'morning stiffness' (as is typically seen in rheumatoid arthritis) but the first movement after being in a particular posture for a prolonged period of time is very painful. The pain becomes less after moving the joint a few times. Cervical spondylosis, lumbar spondylosis etc. are just other names given to osteoarthritis occurring at different parts of the body like neck and lower back.

General principles of management

Most of the diseases of joints are slow in onset and chronic in course. Obviously "instantaneous cures" are not possible. The patient has to be patient. The 'treatment' is actually more like a project in which a team of persons try to help the patient and the patient herself|himself is the most important member of the team. This team tries the most important thing i.e. maintain mobility, stability and function of the joints. This is achieved by extensive physiotherapy, patient education regarding correct postures, splinting of joints at night and other physical measures. The acutal medicines for different forms of arthritis, of course, differs with different disease and this aspect is looked after by the physician trained in joint diseases (the rheumatologist). To say that "there is no cure of arthritis" is just not correct because arthritis is not a disease but only a symptom of a large number of diseases of joints. Even in a serious joint disease like rheumatoid arthritis disease-modifying drugs like D-pencillamine, goldthiols and chloroquine can arrest the disease in the majority of cases. For osteoarthritis, however, the only treatment is intensive daily work-out with physiotherapy. Actually, it can 'cure' the disease. But it must be done correctly and under guidance. Medicines play no role in Osteoarthritis.

Fads and fiction in arthritis

One of the most harmful and widely prevalent misbeliefs, equally among lay public and the doctors, is that 'there is no cure for arthritis'. With this excuse doctors "finally" prescribe cortisone, a medicine which should never be given in any arthritis ordinarily. It spoils the case completely and makes the patient resistant and reluctant to take the correct medicines. This drug quickly leads to major and serious complications. Do not take cortisone preparations for arthritis even if prescribed by your doctor.

Diet and food has nothing to do with any arthritis (except a very rare disease called gout). Therefore, do not rush to the latest food fad for the cure of arthritis. Do not impose any diet restrictions, it does not achieve anything except producing weakness. Take normal nourishing balanced diet with vitamins and minerals. Overweight persons must reduce weight.

Do not rush to the doctor with the latest press report of a magic cure of arthritis. Thousands of such reports have come and gone. Stick to correct scientific programme of management. You will feel the benefit in the long run. Aspirin is still the best drug for inflammatory arthritides in spite of hundreds of press reports against its use. Aspirin if used properly is harmless. The common misbelief that it causes heart disease can be totally ignored. Actually, aspirin is extensively used for preventing heart attacks.

Take-home lesson

The take-home lesson in arthritis is that : be patient, get the disease correctly diagnosed, and get going on the long-term project-like management programme. Physiotherapy exercises, correct medicines, balanced diet would go a long way in controlling the problems. Depression is bad for all arthritides, try not to get depressed. Arthritis is not always incurable. ☐

(Based on a public lecture at the All India Institute of Medical Sciences, New Delhi)

Thanks to sterilisation Tamil Nadu housewife is a lakhpati

SMT. EASWARI, wife of Shri Subramaniam, Mankuttaipalayam Village, Tiruchangode Taluk in Salem District of Tamil Nadu, has achieved the distinction of being the first person to win the first prize of rupees one lakh from the lottery ticket offered by the State Government to the acceptors of sterilisation. Smt. Easwari, mother of two, underwent Laparoscopic operation on June 17, 1983 at Government Hospital, Tiruchangode.

In addition to the Government compensation money of Rs. 160, the Government of Tamil Nadu gave her five State Lottery tickets as suggested by the Union Ministry of Health and Family Welfare. One of the lottery tickets earned for her the first prize of rupees one lakh. She also got two consolation prizes for preceding and succeeding numbers.

Thirty-two-year old Easwari is now the envy of all women and heralds a new era in the family welfare programme. Tamil Nadu was the first State to come out openly to implement the lottery ticket scheme suggested by the Ministry of Health and Family Welfare. Shri B. Shankaranand, Union Minister for Health and Family Welfare, had lauded the example of the Tamil Nadu Government at the meeting of the Consultative Committee of Parliament attached to his Ministry recently. ☐

Science & Technology Notes

Electricity from apples

SCIENTISTS from the Kharkov Physical Engineering Institute of Low Temperatures, Ukrainian Academy of Sciences, have completed the tests of generators of a new type which can use even very weak electric potentials.

Experts hold that practically any object, an ordinary apple, a potato, a chunk of ice and even a human being can serve as a mini-source of electricity. All that needs to be done is to insert two miniature electrodes into an apple which acts as an electrolyte in this case, and here we have current in the circuit. Its voltage is very low : tens of millivolts. But the generator does not only take up this energy, but amplifies it thousands of times as well. One apple can serve as a source of energy for nearly a month.

According to experts, the generators will gain wide application in various fields of the national economy —wherever it is impossible or impractical to use traditional power sources.

To have Cleaner rivers and seas

A NEW DEVICE produced by several research institutes of Kharkov, Ukraine, is designed to protect sea and river waters from pollution.

The institutes have completed the testing of a system to neutralise exhaust gases of diesel engines driving the motor and hydrofoil ships. The new system, mounted on a diesel engine, absorbs 90 per cent of sulphur dioxide, soot and hydrocarbons, and practically harmless compounds are discharged into the atmosphere.

Motor ships plying along the Crimean coast will become the first ships with ecologically clean engines.

Double-Colour thermometer

THE SCIENTISTS of Novosibirsk suggested using, instead of the fragile glass thermometer, a special polymer film. If a child with normal temparature is given such a thermometer, the film will immediately glow green, and when the temperature is high, it turns red.

The film contains temperature-sensitive liquid crystals which, when heated, assume different colours under the temperatures from 10 to 150 degrees. These films can be used not only in medicine but in other fields also.

Now two types of thermometers are being produced —clinical double-colour, and for everyday use, in which figures tinge different colours to show the degree of temperature. Railwaymen, machine-builders and other specialists also took interest in the new liquid crystal material.

The use of new polymer films as temperature-sensitive elements is especially promising. Pasted on the boxes, the liquid crystal "colour-light signal" may help determine the state of the journal-boxes in cars. The polymer will flash in bright colour when the metal becomes dangerously heated. **(APN).**

A silk route to prosperity

Vasudev Bhat

YOUNG VIRUPAKSHA VEERAPPA BANDI of Gawarwad village in Gadag Taluk started looking for a job after passing his Secondary School examimantion two years ago. Around the same time Karnataka Sericulture Development Project was launched to induce farmers in North Karnataka to silkworm rearing and augment their income in their spare time and Veerappa's village had been selected for this programme because of its climate and soil suitability for mulberry plantation.

The project did not make much headway, nor did Veerappa Bandi's efforts at getting a job. The first one didn't because the farmers found it too cumbersome to produce cocoons and take them all the way to Bangalore for selling them, and Veerappa couldn't because finding a job is a Herculean task in itself in the face of galloping increase in the country's population and consequent unemployment problem.

The Government, could hardly make the villagers spare two small patches of land for mulberry cultivation and Veerappa was still unemployed despite his best efforts from dawn till dusk for months.

His need was employment. Karnataka's need was silk yarn to meet the growing demand of the Silk Industry with increasing popularity of Bangalore sarees and silks both in India and abroad. Import of silk yarn from Jammu and Kashmir and other places did not solve the whole problem. Production of more silkyarn indigenously by starting more silk-worm rearing and reeling units was the only answer.

Guidance

Veerapa Bandi, then only 23, gave up the idea of searching for a job. He had seen the Sericulture Assistant at Gadag coming to his village and coax villagers to take to silk farming. One day he went to him with his problem and the official was only too glad to help him. He gave Veerappa technical guidance and arranged for him to go to Mysore for a month-long training in silk reeling under the "Training of Rural Youth for Self-Employment" (TRYSEM) programme.

(Continued on page 30)

Books

Care of the aged

CARE OF THE ELDERLY : A Directory of Non-governmental Organisations for the Welfare of the Aged in India—Centre for the Welfare of the Aged, Madras-600031—Pages 92—Price : not-mentioned

ABOUT 40 MILLIONS of India's population are aged 60 and above, and most of them reside in villages. For the destitute old persons, the State Governments are providing some paltry pension. Non-governmental institutions have set up homes for the aged in various States but they cover only a small portion of the deserving old people. Further, they are confined to urban areas. A well-knit nation-wide organisation to offer varied services to the senior citizens and to mobilise their experience and services for the good of the society is a crying need of the hour. The international conference on the aged persons, which was held sometime back in Vienna, has created a new awareness of the problem of the elderly people.

This directory, which has been jointly compiled by the CEWA and Helpage India, is a timely publication. It contains the addresses and activities of 279 institutions serving the old people in different parts of the country, and it is proposed to update the directory periodically. It is found that most of these institutions are free homes and are run by Christian missions. A majority of them look after both men and women.

This pioneering publication will be of help to those who need assistance and also those who are interested in serving them. It is hoped that more and more institutions of this kind, with coordination among themselves will spring up in the country and that the directory will grow in size with each passing year.

P. Srinivasan

Plant Protection

Use and Marketing of Plant Protection Appliances by G. Patel et. al. Oxford & IBH Pub. Co., 1982—Price Rs. 36.

ONE of the important factors in effective use of plant protection materials is the technology available for using them. Depending upon the crops and their stages of growth, a wide variety of plant protection equipments are used in India. This monograph of the Centre for Management in Agriculture, Indian Institute of Managememnt, Ahmedabad deals with the use and marketing of plant protection materials.

The study is based on secondary data for various States except for Gujarat where it relies on the primary data collected from sample users and non-users of plant protection appliances and the farm labourers hired for plant protection analysis. Users are divided into two groups, those owning and not owning appliances. There appears to be a positive association of plant protection measures with land holding size. But the acceptance and subsequent abandonment of the practice of protecting the crops is not related to the size of land holdings. A high relationship between irrigation and plant protection is also observed.

General awareness about the plant protection is good. Quite a large number of users hire the appliances. Non-availability of finance is the principal cause of discontinuing plant protection by the non-users. This, in turn, has its impact on the derived demand for appliances. The cost of hired equipment per ha. of area treated is very high (about Rs. 61) in comparison to the cost of per ha. of own equipment (Rs. 8.45).

A very significant factor pointed out by the study is the involvement of high proportion of hired workers for plant protection work without adequate safety measures. Besides, the revelation that 72 per cent of labourers stating that no higher wage was given to them for the hazardous work than the farm work is to be noted with concern by anybody interested in developmemnt. Further, continuous exposure for long period without any precautions has its deleterious effects on health of the poor agricultural labourers.

The study shows that about 72 per cent of the workers has continuous exposure upto 3 days and 17 per cent for 4 to 5 days. Ten per cent of the workers has continuous exposure for over 10 days.

The authors try to find out the relationship between plant protection equipments and area under specific crops, like sugarcane, groundnut and cotton, in respect of the States of the Indian Union for the year 1972, for districts of Gujarat, 1972 and Taluks of Gujarat, 1977. At State levels, sugarcane, groundnut and cotton together explain a high proportion of variability observed in the number of appliances.

This study is timely and will be highly useful to policy makers both for agricultural production and equity considerations relating to the agricultural labourers engaged in plant protection.

Dr. D. Tripathy

Industrial development

Industrial Development by M.R. Kulkarni, Published by National Book Trust of India, New Delhi--16, price Rs 24/-pages 384

THIS is a revised edition of a book written by Mr. M. R. Kulkarni, way back in 1971. This bulky book offers a historic perspective to the industrial development of modern India. The author has amassed rather meticulously an array of statistics that covers plantation industries, infrastructure of industrial development and the textile industries.

Mr. Kulkarni contends that there was a virtual investment famine in the country during the decade 1965—1975, though the Fifth Plan made an attempt to contribute to the revival of public sector investment on a massive scale and this was continued in the Sixth Plan too. Pointing out that capacity addition to the country's key sector has been considerable over the years, Mr. Kulkarni avers that "today we have neither a serious capacity constraint or even an infrastructure constraint so much as a growing demand recession". The growth prospect of Indian industry, in fact the Indian economy, depends upon the successful exploitation of the indigenous market to a maximum extent.

According to the author, the share of manufacturing sector in the country has scarcely changed from the start of the twentieth century and in the past 25 years, in spite of forced pace of industrialisation, change has been at best marginal and peripheral. Deploring the whole controversy of industry versus agriculture as misplaced Mr. Kulkarni notes the approach ought to be in terms of a co-ordinated development of the economy where industries and services basically play the role of supporting agriculture and the decentralised economy and drawing from it for their own expansion.

Although the author has assembled statistics painstakingly to project the industrial profile of India, the sheer mass of statistics and figures would likely to dampen the zest of readers, who may be content with an interpretative approach and critical comments on the performance of various productive sectors of the economy. Nonetheless, the book would be of great benefit to students who would like to know the historical background of India's industrial development.

G. Srinivasan

Economy of Azerbaijan

Soviet Economy : Development of Azerbaijan by Vinod Mehta. Sterling Publishers, New Delhi, Rs. 50/- pages 116.

AZERBAIJAN is one of the fifteen union republics of the USSR. It is the biggest of the three transcaucasian republics. The Azerbaijan Soviet Socialist Republic includes the Nakhichevan Autonomous Soviet Socialist Republic and Nagorny Kerabakh Autonomous Region.

Except for the oil industry, Azerbaijan has been as backward as any other central Asian republic. The establishment of Soviet power in Azerbaijan and the decision of the leaders to follow the strategy of planned economic development have however changed the fate of the republic.

The book, under review, attempts to present the data on various economic indicators of Azerbaijan. It traces the emergence of this region from the poverty, illiteracy and economic backwardness that characterised its pre-revolutionary fate, to economic development and high growth rates under the USSR.

Today, Azerbaijan is marching ahead in its economic development along with other Republics of the USSR.

The book divides into seven chapters : Introduction; Democratic Profile; Agriculture; Industry; Living Standards and Social Development; and concluding remarks. It ends with an index. The author claims to have presented for the first time in English language time series data on various economic indicators of Azerbaijan with the hope that some other Indian scholar would take up the study of this region. Get up is good. Looking at the present trend of book-prices, it is reasonably priced.

S. K. Dhawan

(*Continued from page* 28)

After his training Veerappa accompanined the Sericulture Assistant to the Balaganur branch of the Malaprabha Grameen Bank. The Bank readily provided a loan of Rs. 37,500 including Rs. 10,000 as working capital. Out of the capital investment of Rs. 27,500 for his Reeling Unit, the government gave subsidy of Rs. 6,875 to him.

All this happened two years ago. Today V. V. Bandi, 25, is the proud owner of a small scale silk reeling factory right in his own village producing 50 kg. silk yarn every day. It has not only provided him gainful employment averaging Rs. 2,000 per month, but has also helped him to employ a dozen youngmen of his area.

In addition the Reeling Unit has also solved the problem of taking cocoons to Bangalore for sale, which was hampering farmers from taking to silk worm rearing. They have a ready market in their own village now.

Today just after two years, mulbery shrubs in Gawarwad village are spread over an area of 300 acres engaging 200 mulberry and cocoon producers instead of the two small mean patches of land two years ago. A new silk route has been opened by him which runs from his village Gawarwad, down South, to the Bangalore Silk market.

Central aid for rural drinking water to States

THE MINISTRY OF WORKS AND HOUSING has released an amount of Rs. 4,090 lakhs to eight States for execution of works under the Centrally Sponsored Accelerated Rural Water Supply Programme during the current financial year.

Out of this releases four States, namely, Gujarat, Haryana, Himachal Pradesh and Punjab have been given an amount of Rs. 250 lakhs each as additional *ad hoc* allocation of grant-in-aid for 1983-84. Tripura gets an *ad hoc* allocation of Rs. 75 lakhs for the year.

Helping tribal cotton growers

THE 24 CENTRES opened to help the tribal cotton growers of Andhra Pradesh, Gujarat, Madhya Pradesh and Rajasthan alone collected 3,62,000 quintals of cotton worth Rs. 17 crores, in 1982-83.

These Centres were opened by the Cotton Corporation of India as a part of its contribution to rural development and tribal welfare.

Most of these Centres are in inaccessable areas, where earlier the middlemen and usurers had thrived by fleecing the tribals. They have now been virtually eliminated and tribals are now confident that nobody will cheat them.

The Corporation's coverage of cotton in the country ranges between 10 to 12 lakh bales accounting for about 15 to 18 per cent of total cotton production. This excludes production in Maharashtra where the Corporation does not operate. During the current season, it has so far purchased about 9.43 lakh bales valued at about Rs. 221.61 crores. Its purchase operations during the past five years have considerably helped the cotton growers in marketing their produce at remunerative prices and reducing their dependence on the middlemen. Its continued presence in mandis throughout the season works as a guarantee for the cotton growers against the ganging up by middlemen.

The Corporation has also been increasing the number of its purchase centres year after year in various cotton growing States except Maharashtra. The number of purchase centres, which was 132 in 1978-79 had reached 214 in 1981-82. The Corporation operated at 193 Centres so far during the current season against 266 proposed centres.

The Corporation has been making consistant and systematic efforts for proper growth of marketing infrastructure for orderly marketing of this cash crop. In Gujarat, Tamil Nadu and Andhra Pradesh, such infrastructure is other weak or non-existent. Its policy of operating only in the regulated markets creates keen competition among the buyers in these markets which in turn helps the cotton growers. As the auctions are held under the supervision of the Agriculture Production Market Committees, the chances of malpractices in weighment, etc. are almost non-existent. The Corporation also ensures expeditious payments to the cotton growers.

Utilising the cooperative infrastructure has been one of the main aims of the Corporation's operational policy, ever since its inception in 1970. The services of cooperatives are used in a number of ways such as processing of its kapas stocks, storage of stocks and augmenting its purchases. During 1982-83, it had engaged 52 cooperative ginning and pressing factories for processing of its kapas stocks. It had purchased 32,565 full pressed bales from co-operatives besides purchases of 16,155 quintals of lint, valued around Rs. 10 crores. The Corporation of India utilised the warehousing facilities in cooperative sector wherever available. □

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AIZAWAL, the capital city of Mizoram, is "dry" in the most literal sense of the word. It has no water. Situated in the middle of one of the most rainy areas of the world and surrounded by rivers big and small, its condition is Coleridgean with "Water, water everywhere, but not a drop to drink".

So trucks lug water from the rivers down below, to quench the city's thirst. One bucketful of water costs one rupee.

But Aizawal will no more be dry, once the one megawatt SERLUI-"A"-Micro Hydel Project is completed shortly. Power from Serlui will pump enough water to Aizawal, to meet all its needs.

Serlui is only of the projects thus taken up for execution. The Bairabi Hydel Project, the biggest under construction in Mizoram, will feed 250 megawatts of electricity to the power-hungry territory. It is estimated that Mizoram has the potential to produce 5000 MW electricity, which is much greater than what any of her six sister States in the North-East can do.

In pursuance of the 20-Point Programme, in 1982 alone, 28 villages were electrified, using small diesel generating sets. A total of 98 villages have thus been electrified. This power is available for Cottage and Small Industries also. Irrigation and industries will get power on a larger scale only after the completion of the projects under construction.

Presently Mizoram is buying power from Assam at a cost of 50 paise per unit and distributing it for 48 paise per unit to domestic users and 35 paise per unit to Small Industries.

Power is brought from DULABCHERRA and THINGSULTHLYA in Assam to Mizoram through two 66 KV lines drawn over 123 km of very difficult terrain. But due to erratic weather and difficult terrain, this power supply is not very dependable.

So the Territory is in a hurry to complete its mini and medium hydel projects unde[illegible]uction and to provide more diesel sets for village electrification. The day wh[illegible]oram marches from darkness unto light is not far away. ☐

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SOCIAL FORESTRY GAINS & FAILINGS

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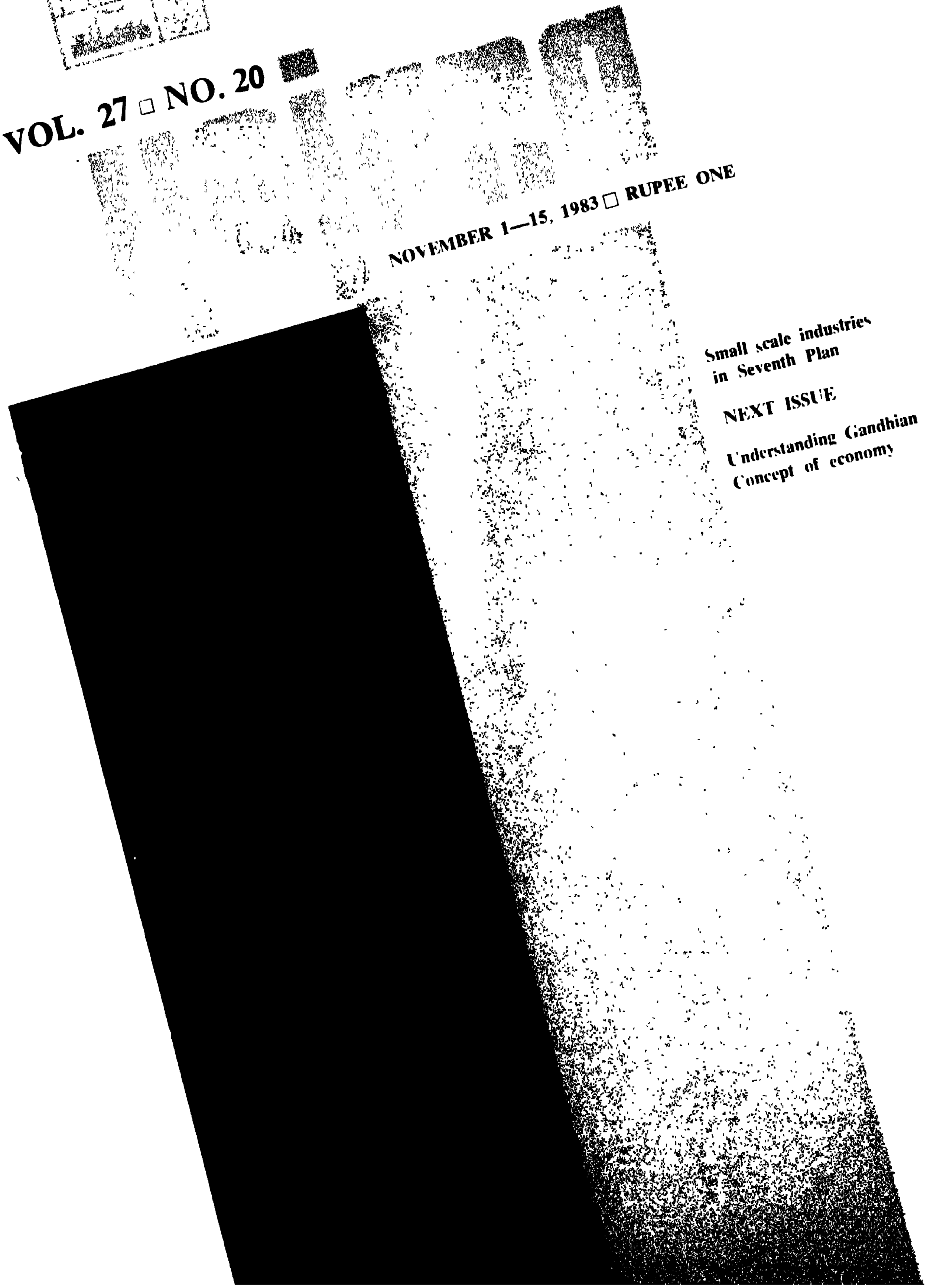

NOVEMBER 1—15, 1983 □ RUPEE ONE

Small scale industries in Seventh Plan

NEXT ISSUE

Understanding Gandhian Concept of economy

Drinking water for 8,900 villages in three months

DURING the first three months of current financial year, 8,885 villages were provided drinking water under the new 20-Point Programme. This is 18.2% of the annual target. The Centre has released Rs. 107.47 crores to the States and Union territories for this purpose.

About 4,000 bonded labourers were rehabilitated during the same period. Karnataka and Orissa were ahead of other States and Union Territories and accounted for 2,700 out of these.

The total number of Scheduled Caste and Scheduled Tribe families assisted during the quarter under review was over 2.28 lakhs. Out of these 50.536 were Scheduled Tribes. The Planning Commission has asked the States to ensure that there is no multiple counting of Scheduled Castes and Scheduled Tribe families financially assisted through different schemes.

The achievement in the allotment of house-sites has been quite satisfactory with more than 1.94 lakh families having got land for constructing their houses. The annual target is of allotting 8.73 lakh house-sites. About 55.000 families were provided construction assistance also.

Planning Commission feels that the coverage in terms of number of families in this field is somewhat lower than expected because almost all the states are following a pattern of assistance which is much higher than that envisaged in the plan. ☐

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Development of Small Scale Industries in Seventh Plan

S. B. Chavan

While stating that Planning Commission has just started a dialogue on the formulation of an approach to Seventh Five Year Plan, the Union Minister for Planning Shri S. B. Chavan says, "we have created adequate infrastructure for promotion of small industries in terms of training, extension work, technological, financial support, etc." He has called for making an effective use of the institutional and infrastructure support which the Government is extending throughout the country to make the small industries movement a catalyst for rapid economic growth.

WHILE LARGE and basic industries may provide essential raw materials and producer goods, they are expected to create only half a million jobs during the 6th Plan. In contrast, the dispersed village and small industries were expected to provide nine million jobs both part-time and full-time, or in other words five million full time jobs. On employment alone, it is winner par excellence. In the capital scarce developing country, we need the proliferation of manufacturing units with low capital output and low capital employment ratios. Small units have these characteristics and they are ideally suited for developing economies like ours. Also, small enterprises are the most effective means of mobilising local raw materials, capital initiatives and skills which also achieve widespread dispersal of industries including the development of remote and backward areas. These are the reasons why the Government included this sector in the 20-point programme of the Prime Minister for special attention which was announced in January, 1982.

The village and small industries sector as a whole accounted for an estimated production of over Rs. 7,000 crores during 1982|83 at 1979|80 prices which comes to about one half of the total production in the manufacturing sector. In terms of contribution towards gross domestic production, its share was also about 50 per cent of the manufacturing sector. This sector offers employment opportunities to nearly 26 million persons both part-time and full-time and in the field of exports this sector accounted for about one third of the total exports of the country.

Correcting regional industrial imbalances

The Government have recently announced new incentives for setting up of industries in 'No-Industry' districts and backward areas. As you are well aware, one of the important objectives of Government policy is to correct regional imbalances and secure industrialisation of the backward areas. We have not only enhanced the amount of capital subsidy in 'No-Industry' districts and special regions but also provided investment subsidy in many areas which were so far eligible only for concessional finance. It has also been decided that all the three categories of backward areas will henceforth be eligible for concessional finance as well, in addition to Central Investment Subsidy. Further, realising that one of the impediments for development of industries in the backward areas has been the absence of infrastructure facilities, it has been decided to assist the State Governments for development of infrastructure in one or more identified growth centres in 'No-Industry' districts. Although Central assistance will be limited to one third of the total cost of infrastructure the ceiling of Rs. 2 crores per district is fairly high and I am sure infrastructural impediments will be rapidly removed in the growth centres. In order to help small industries in the taluks|areas where heavy investments have already taken place and are therefore not eligible for further investment subsidy, we have made an exception so that the small scale enterprises are not debarred from concessional finance. This should amply demonstrate the concern of the Government for promotion of small industries.

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*A speech at the seminar on seventh five year plan and small industries organised by the Federation of Association of Small Industries of India, New Delhi, September 29, 1983.

Ancillarisation by small scale enterprises

Another important area in which I consider small scale enterprises can play a vital role is ancillarisation. To assist the small scale entrepreneurs in meeting ancillary requirements of large scale enterprises although we have set up 16 sub-contracting exchanges, the Bureau of Public Enterprises have issued guidelines, several local and regional committees have been established in the public sector undertakings for the promotion of ancillaries, yet I must confess that we have not made much headway in this field. The purchases of ancillaries is less than 1 per cent of the total sale value of the products of large units. Ancillarisation can only happen in terms of economic compulsion. Over capitalisation can be checked in large units, if parts and components could be obtained at reasonable prices, with acceptable standards and on time. The organic link which needs to be established between large scale mother and the ancillaries are yet to be forged.

Nucleus plants by large enterprises

So far as the new large enterprises are concerned. I would like to mention about the establishment of nucleus plants in industrially backward districts with a view to generating a spread-out network of small scale enterprises. It is envisaged that the nucleus plants would be set up which would provide common facilities, design and documentation, testing facilities as well as marketing support. These basic service units are to be so designed as to ensure technological competence and manufacturing excellence. If such a large number of small industries so developed can manufacture acceptable products, it would be possible for nucleus plants to take over marketing under its own brand name. In a different setting, the nucleus plant would basically be set up to provide for assembly and in-house production of critical and sophisticated items that cannot be manufactured by ancillary industries. It is envisaged that components, sub-assemblies and assemblies would be made by ancillaries to the design and specifications of nucleus plants. We have announced a series of concessions for such plants.

Data base for growth of small industries

Another important area is the building up of channels for regular flow of statistics of small scale industries which would help proper formulation of the development programmes and subsequent evaluation of the progress achieved. Lack of data base is one of the major constraints for planning. We have constituted a Committee for the Improvement of Data Flow for the decentralised sector. While the Committee has given its recommendations and the implementation would take time, in the meanwhile we have decided to increase the size of the sample survey, being conducted by the Small Industries Development Organisation, to 20 per cent. The reliability of such sample survey and its utility can be enhanced if all small scale units register themselves forthwith with the State Directorate of Industries or Small Industries Service Institutes. As it is, over 40 per cent of the small scale units do not register themselves and we are handicapped by the absence of data from them.

Self-employment for youth

We have introduced a new scheme a few years ago known as TRYSEM, namely : Training of Youth for Self Employment. Nearly two lakh people are being assisted each year under this scheme. In order to help the educated unemployed, the Prime Minister had announced on this year's Independence Day a revolutionary scheme to help unemployed youth between the age group of 18 to 35 years and who are matriculates and above and those who are not able to muster their own capital to launch on self employment ventures in industry, services and business. It is proposed to give due consideration and weightage for women and technically trained personnel under this scheme. The scheme envisages extension of credit facilities for bankable projects to the extent of Rs. 25,000 without collateral guarantee or owner's contribution and an outright subsidy to the extent of 25 per cent of the loan. With the cooperation of all it is our fond expectation that the scheme will wean away a number of people seeking white collar jobs and create the necessary influence, climate and dignity for self employed avocations.

Training for potential entrepreneurs

We very often hear that entrepreneurs are born and they are not made; it is a god given quality which cannot be cultivated. While I have great doubts in my mind about such sayings, my only contention is that we have among us a very large number of entrepreneurs who are not even aware of their potentials. This is one of the reasons why we have mounted a nation wide training programme for potential entrepreneurs. Recently we have also set up a National Institute of Entrepreneurship and Small Business Development to serve as an apex institution to bring about a certain degree of upgradation in the programme of entrepreneurship development and make it more effective.

All schemes that are existing and the new initiatives that we have taken recently would need the support of one and all concerned to make them successful and small scale industry associations will have to play a vital part. It is my firm opinion and in fact, if I am permitted to take the liberty, I will even propound the axiom that the primary and mandatory duty of the second and subsequent generation of entrepreneurs is to promote first generation entrepreneurs. Human and material resources could be of little value, unless there

(Continued on page 9)

Social Forestry Gains and Failings

N. D. Bachkheti

The role of social forestry in India is significant. The success of any social forests programme and its rightful place in rural development would involve the active interest and participation of the rural population in the programme right through planning stage, says the author. He regrets that, little attention has been paid to the extension services—needed for the purpose.

LIFE OF MAN and development of civilisation have been profoundly influenced by the presence or absence of forest or their relative abundance or scarcity.

It is recognised by experts that civilisation has faced three different stages of forests in the march of man towards development :

1. Civilisation dominated by forests.
2. Civilisation overcoming forest.
3. Civilisation dominating forest.

The two decades after the world war could be placed under the third stage i.e. civilisation dominating forest, as these two decades were characterised by a care-free belief in growth and progress all over the world—a belief in achieving the achieveable. The key to this progress was temptingly simple; free economy, invest, develop, harvest and enjoy. Accordingly development followed the laws of exponential growth. No doubt, by applying more energy and exploiting natural resources to meet the demand we created a material prosperity and for a long time it remained unnoticed that this material progress would also have its price. Even at the beginning of the sixties expressions such as environmental protection and ecology were as good as unknown until people realised the bitter after-taste of the fruits of prosperity.

Due to deforestation more than half of our country suffers from soil degradation. According to an estimate about 175 million hectares—i.e. 53 per cent of the total geographical area of the country—suffers from soil erosion, land degradation due to water logging, salinity, alkalinity and other hazards. Besides about 260 million hectares are under water stress conditions, 170 million hectares are subject to severe drought, 76 million ha. to moderate drought, 47 million ha. to large drought and 20 million ha. to hazardous conditions.

During the period 1953 to 1980 damage by flood has been approximately of the order of Rs. 3630 million. It needs no emphasis that destruction of vegetation has been the main cause for both soil erosion and flood damage.

Forest Eco-systems in India

Forest eco-system in India occupies nearly 75 million hectares constituting 22.8 per cent of the total land area in the country. In the past, extensive areas supporting natural vegetation came under man's pressure in different regions of this country and this impact has been felt through certain well defined routes such as clearing and burning for cultivation, grazing by livestock etc. As long as our population remained relatively stable for a period this way of life could sustain the population and levels of production were adequate to ensure supplies of the basic needs. In the several preceding decades, however, the country has had a rapid population growth making it impossible to maintain sufficient production by traditional methods.

Aspiration for, higher standards of living from the spread of information, have created new social stresses resulting in substantial loss of forest area and extensive environmental degradation leading to ecological imbalance. Needless to mention that this phenomenon is bound to continue with increase in population which in turn would mean an increased demand on forest resources.

In this context it would be relevant to point out that traditional forestry coupled with the population pressure failed to develop the kind of forestry that would serve the peopl'es material welfare. It is an established fact that non-commercial fuel form 60 per cent of the total energy consumption in India. But our production of fuelwood is far below the requirement. The total production from government forest being just about 15 million tonnes.

As regards production from the non-forest areas, the data collected in the 28th round of National Sample Survey indicates that about 30 million tonnes of firewood is obtained from private lands and gardens as also from trees around houses. (These estimates are based on the fact that the total growing stock in the non-forest area is about 1150 million cubic metres. If the annual average increment is taken to be 0.3 cubic metres per annum, the yield works out to 30 million tonnes of fuelwood). In addition to the above yield, another 4 million tonnes of fuelwood production has been estimated from the plantations raised under development plan schemes of social forestry, farm forestry and fuelwood plantations. Under these schemes, a total of 0.52 million hectares of area has been planted upto the end of Fifth Five Year Plan. Thus, the total availability of fuelwood at present can be assumed to be 49 million tonnes, against the requirement of 133 million tonnes (this excludes the use of cow dung and vegetative wastes). It is best left to the readers to imagine how the present gap is being made up at the cost of our forests and environment.

Not an isolated problem

Firewood shortage is not an isolated problem as it diverts cowdung and agricultural wastes from its use as organic manure to fuel for cooking and thereby affecting sustained agricultural productivity. It also undermines agricultural activities by diverting manpower from productive farm work to firewood gathering. It is estimated that 18 per cent of human labour spent on domestic work is consumed in collection of firewood required for cooking. According to a study made by the Planning Commission's working group on energy, "millions of poor rural women are caught in a vicious energy cycle. They eat food to get human energy and then spend all this energy in producing food and collecting the energy needed to cook it." According to another study, the women of some villages in the Garhwal region of U.P. walk for at least 7 hours, 3 out of 4 days to bring a headload of about 25 Kg. of wood for cooking the family's food. Almost similar is the tale of woe in many other States.

Besides fuelwood there is an acute shortage of fodder for the cattle population in the country. Approximately 15 to 20 per cent of the total cattle population in India depend on forest for grazing. The green and dry fodder requirements are 445 million tonnes and 437 million tonnes respectively. Scarcity of fodder has resulted in over-grazing of the forest areas and consequently affected regeneration and development of forestry in the country.

The rebuilding of existing forest resources near the villages for rural housing needs and agricultural implements pose another major problem as no vital alternative in material is available to the low income group in the rural areas. Some attempts of appropriate rural housing with substitute material have been made and so also an attempt has been made to substitute timber for agricultural implements through use of steel, but without any success. Therefore, if the basic needs of shelter and timber for agricultural implements is to be satisfied, dependence on forest resources cannot be avoided.

It is against this backdrop that a massive social forestry programme has been launched throughout the country.

Social Forestry

The programme envisages the integration of the three missions : protection, production and the environment. This is in contrast to traditional forestry which remains involved with masses of trees, a renewable resource growing in areas far distant from the people. Social forestry adds a new dimension ; masses of people in proximity to trees and forest as an integral part of man's environment.

Social forestry, therefore, is the establishment of wood-based production system on uncultivated and barren lands for (a) site improvement (b) habitat improvement (c) major and minor forest products such as small timber, fuel, fodder fruits etc. In a nutshell social forestry programme is a set of interconnected actions and works executed primarily by the local community to improve their own welfare. The strategy for planting is to select fast growing species yielding fuel, small timber, fruits and traditional minor forest products for the welfare of the rural population. This programme of social forestry which has been undertaken in the past received a big thrust with the Prime Ministers 20-Point Programme.

As against 1.4 million ha. planted under social forestry programmes since the First Five Year Plan up to the end of Fifth Five Year plan, target is fixed to plant 1.5 million ha. during Sixth Plan itself. Under Centrally Sponsored Scheme the targets fixed for VI Plan are planting of 2.60 lakh ha. of fuelwood plantation and supply of 58 crore seedlings to public for planting on farm lands with an outlay of Rs. 97.21 crores (Central grant—Rs. 50.00 crores).

208 crore seedlings were planted during 1982-83 against the target of 196 crore seedlings. During 1981-82 and 1980-81, 132 crore and 85 crore seedlings were planted respectively. During 1982-83 an area of 3.70 lakh hectares was covered under social forestry programme against the target of 3.39 lakh hectares. The target fixed for 1983-84 is 4 lakh ha. During 1981-82, plantations were raised over 2.54 lakh ha. Under farm forestry the number of seedlings supplied to the public during 1982-83, was 894 million against the target of 809.7 million. The target fixed for 1983-84 is 1,000 million. During 1981-82, 441

million seedlings were supplied to the public for planting.

Seeking foreign assistance

The Centrally Sponsored Scheme of "Social Forestry including rural fuelwood plantation" is now being implemented over 157 districts (during 1981-82 in 101 districts) all over the country. Under this programme an effort has been made to plant the degraded and barren lands for meeting the needs of fuel of the poor people in chronically equal deficient districts. Areas like panchayat lands, roadsides, railway land, canal sides and lands near cities and towns are being planted under the social Forestry Scheme.

Due to shortage of resources for taking up afforestation programmes for meeting the needs of rural population, efforts have been made to formulate projects with foreign assistance. Externally aided social forestry projects are under implementation in the States of Uttar Pradesh, Gujarat, West Bengal, Madhya Pradesh, Tamil Nadu, Jammu & Kashmir, Haryana and Maharashtra Projects for Andhra Pradesh, Orissa, Karnataka and Bihar are in various stages of finalisation. The total investment envisaged on externally aided social forestry project is around Rs. 500 crores. As per the present programme 6,83,020 hectares will be planted, 80.1 million seedlings will be distributed for planting on farm lands and 6075 km of avenue plantations will be raised during the period 1982—87.

Gains and Failings

Direct benefits from the social forestry programme would be three-fold :—

- (i) It would provide fuel, fodder, small timber and other minor forest products essential for the community.
- (ii) It would generate income and employment in rural areas through wage distributed.
- (iii) It would help to maintain the environmental stability on which the satisfactory quality of life and continued food production depends.

It has been estimated that on a conservative estimate the above programme of social forestry would be able to produce 24 million tonnes of fuelwood and thereby reduce the gap between demand and supply at least to some extent. Though, of course, it has been estimated that if existing fuelwood requirement of the country is to be met, about 15 million hectares of land will have to be planted with fuelwood tree species.

Pasture and fodder trees proposed to be raised in the social forestry programme will augment the total production of green and leaf fodder in the country, and, this in turn, would benefit the local population through improvement in milk yield. It will also help in reducing the damage to forests due to grazing and facilitate in restructuring and improvement in the soil. Needless to point out that over-grazing has been one of the main factors responsible for the destruction of the forests in the country. In fact, the cattle population is almost competing in number with the human population and in the process consuming the forest resources which normally should have been available to the human population. Incidentally, it may be mentioned that we have 2 per cent of the earth's land area, 1 per cent of its productive forest area, 15 per cent of its population and 10 per cent of its cattle population. It has been estimated that if we are able to control the growth of this enormous population of cattle and restrict grazing according to the carrying capacity of the land we would require half the efforts presently required for building up our forest resources.

Employment

Generation of employment opportunities is one of the most important components of the national economic policy. During the Sixth Plan period about 3 million hectares of barren and uncultivated land would be brought under the productive use. In addition, seedlings would be supplied free of charge and planted by the public. This activity of the plantation is to be achieved largely through the use of labour which represents about 80 per cent of the planting and maintenance expenditure. Employment opportunities would also be generated in harvesting, processing and transporting the produce once the plantations are mature. The total mandays generated for this purpose would amount to around the same as that generated during the plantation activities.

In the context of the above, it would be worthwhile to mention that rainfed agriculture uses a little over 26 mandays per year per hectare whereas depending upon the choice of the species and the rotation, the annual labour requirement in the case of forestry plantation various from 35 to 75 mandays per hectare. Besides tree crops, improvement of yield from livestock due to increased availability of fodder will facilitate the monetisation of the economy more effectively and give a big push to the economic uplift of the local people.

Environment

Social Forestry plantation would play a positive role to reduce soil erosion in agricultural land as well as on village common land. The protection of soil within the plantation from over-grazing and trampling would improve water percolation of soil, restore ground vegetation and increase the percentage of perennial grasses.

Experimentations on water yields have produced revaling conclusions on how changes in forest vegetation can increase or decrease total run off from a water shed. Research conducted by Soviet Experts in USSR has shown that a chance of 10 per cent in the forest cover in their Central Forest belt has altered the volume of precipitation in the area by 4 per cent. In the rainy season, increase in precipitation due to the presence of forests and the consequent condensation of vapour in the air is as much as 10 per cent. In non-wooded areas, 60 to 80 per cent of the precipitation runs of on the surface : in steep forest areas (forest cover 20 per cent) the corresponding figure is 25 per cent and in thick forest areas (forest cover 60 to 80 per cent), it is only 7 per cent.

In addition to water conservation functions, the role of forests in preventing water and wind erosion was also worked out. Soil loss per hectare of arable land was found to be 2.5 tonnes at a distance of 100 mts. and 38.4 tonnes at a distance of 600 mts. Wind velocities in agriculture fields, protected by forest belts was 35 to 40 per cent lower than in the open areas, evaporation 40 to 50 per cent less and air humidity 3 to 5 per cent higher.

The forests in our country receive an estimated 92 million ha. m. of precipitation every year. As discussed earlier, this is processed through the "forests" and delivered into the drainage system as well as deposited in the ground water reservoir or stored temporarily in the spil|rock profile below the forest floor. It has been estimated by scientists that the forest soils in our country can store 25 m.h.m. or 25 X 10, 10 cu.m. of water. An earthen dam of an equal capacity will probably cost over Rs. 1,25,000 million. On a conservative estimate, it costs Rs. 5 to store 1 cu.m. of water in an earthen dam. The soil moisture storage per ha. of real forest area is equivalent to an earthen dam costing Rs. 16,600 approximately.

Neglect of Extension Services

From the foregoing it would be appreciated how important is the role of social forestry in India. However, the success of any social forestry programme and its rightful place in rural development would involve the active interest and participation of the rural population in the programme right through from the planning stage, followed by continuous process of communication between people and various government agencies, changing the means and attitudes through training and education and providing appropriate institutional and organisational structure for faster communication and participation. Unfortunately, little attention has been paid to the extension services needed for the purpose. A well organised forestry extension organisation is considered necessary in all the States. The activities of this organisation should incorporate extension services in the field, monitoring and evaluation of State social forestry| community forestry programme and evolving ways and means for ensuring community participation. A related activity would be the setting up of a directorate of extension at the Centre as a considerable amount of education and research work would be essential on different aspects of community participation and cooperation. This Directorate would undertake research in methodology of educating masses in sociology and in rural economics as related to fuel-wood plantation and other connected activities. One of the measures to achieve this aspect would be to set up Van Vigyan Kendras in different parts of the country.

In regard to research needed for the above programme it needs to be stated that so far research has been confined to major tree species like teak sal etc. Very little attention has been paid to research on tree species being planted under the social forestry programme. It needs no emphasis that research has to play a very strong supportive role for the success of **this programme and, therefore, research work needs to be augmented manifold.**

Another important aspect which needs considerable attention is the lack of basic knowledge on structural sociology and extension techniques among the foresters. The field staff has to be of outstanding personnel qualities, and technical ability in tact, humility and imagination required in dealing with the villagers. Therefore, training of foresters needs to be reoriented so that they are well equipped to deal with the people along with the trees. ☐

(Continued from page 5)

is entrepreneurship. What else could be more rewarding to any entrepreneur who has created new entrepreneurs ?

Public Cooperation

No policy of the Government can succeed without the active cooperation of the public. We have created adequate infrastructure for promotion of small industries in terms of training, extension work, technological and financial support, etc. Some times I am told that that we are over institutionalising more than what is necessary for the purpose, although I am of the firm contrary opinion. I urge upon all the entrepreneurs gathered here to make an effective use of the institutional and infrastructural support which the Government is extending throughout the country and make the small industries movement a catalyst for rapid economic growth.

Trysem to include wage employment

The scope of the Scheme for Training of Rural Youth for Self-Employment (TRYSEM) has been enlarged to include wage employment in a limited scale. The stipend rates of training have also been raised.

The need for inclusion of wage employment was felt because it has been found that there is good scope for wage employment as well as self-employment in rural areas around various industrial estates being set up by State Governments. Training for wage employment is, therefore, included in the case of schemes linked to specific projects and in the decentralised rural industries. It is, however, required that at least 50 per cent of the youth are trained for self employment in such projects.

The stipends payable to the trainees under TRYSEM have been raised from Rs. 50 per month to Rs. 75 where training is conducted in the village of the trainee, and from Rs. 125 to Rs. 200 where it is held outside the trainee's village and no accommodation **is provided and Rs. 150 from Rs. 100 if free accommodation is provided.**

Curbing the evils of dowry system

On 27 May 1983 an Additional Sessions Judge in New Delhi sentenced three persons to death for burning a bride in Delhi in December 1980. The severity of the sentence exposes the barbarity of the bride's murder for dowry. It indicates that how traditionally worshipped 'Grihalaxmi' is being harassed for dowry and becomes a victim to the age old traditions.

This article deals in brief with the growth of the dowry system and the steps taken by the Government to curb this evil.

THE NUMBER of deaths of young brides because of reasons connected with dowry has almost doubled in the last seven years. According to the Home Ministry's figures during the period from January 1980 to March 1981, 139 dowry death cases were registered with the police in various parts of the country, whereas during 1978 only 35 incidents of dowry deaths were reported throughout the country. In 1979, the incidents of dowry deaths increased to 54.

Although dowry, on theoretical plane, is condemned by all in this country, in actual life most of them are parties to the vice. A situation has emerged in the society wherein dowry payments are taken as symbols of high social rank of the family and are not deemed as illegal or unethical nor seen with disapproval by the people in the society. Even the people who have experienced the pinch of this evil system in the marriages of their daughters, remain keen to get dowry in the marriages of their sons.

Development of the dowry system

In ancient times dowry had religious as well as social sanction. According to Hindu Shashtras no 'Dana' is complete till the receiver is given some 'Dakshina'. Dowry was regarded as 'Dakshina' in 'Kanyadan'. According to law woman could neither hold nor inherit the property. To compensate the denial of the right to hold or inherit the property gifts in cash or kind were given to daughter on the occasion of her marriage. These gifts were called 'Stridhana' and were treated as the future security to meet her financial needs. The Stridhana was the property over which woman had the absolute power of disposition whether by gift or will.

The custom persisted during the Mughal period also. This is evident from *Ain-i-Akbari* where there is reference to the great Mughal Emperor's disapproval of "high dowries" which he describes as "a mere Sham". Kavi Shyamaldas in *Vir Vinod* has given a vivid description of the marriage of Gaj Singh, younger brother of Maharana Jai Singh, in 1696 when the dowry brought by the bride included nine elephants and 150 horses in addition to a lot of other articles. In 19th Century, a large part of the correspondence exchanged between Indian Maharajas and British rulers dealt with pleas for increased allowances by the former for marriages of their daughters.

The deputy commissioner of Oudh in a letter to the political agent in Baghelkhand, refers to a settlement of marriage between daughter of the Rani of Isanagar with the Jagirdar of Jasco where the terms of settlement included Rs. 500 in Chedan, Rs. 25,000 in Tilak, Rs. 20,000 in cash and Rs. 5,000 on marriage.

Role of social reformers

The social reformers of the nineteenth and early twentieth centuries i.e. Raja Ram Mohan Roy, Ranade, Ishwarchandra Vidyasagar, Mahatma Gandhi and Baba Saheb Ambedkar worked to abolish the age-old practice of dowry.

Mahatma Gandhi laid special stress on the abolition of the evils of dowry system and said "There is no doubt the custom is heartless. The dowry system has to go. Marriage must cease to be a matter of arrangement made by parents for money". He was of the opinion "Any youngman who makes dowry a condition of marriage discredits his education and his country and dishonours womanhood".

Pre-Independence and Post independence measures

Long before Independence, the provincial Government of Sind passed an enactment in 1939. After independence, the State Governments of Bihar and Andhra Pradesh passed "The Bihar Dowry Restraint Act, 1950" and "The Andhra Pradesh Prohibition Act, 1958" respectively.

Though efforts were made by various states to curb this evil by legislative as well as other social measures but it kept on growing which led to the enactment of The Dowry Prohibition Act of 1961. It assumed all the features of a commercial transaction and instead of subsiding started taking deeper roots. Realising the magnitude of this problem, the Central Government advised the State Governments to carry out amendments in the Dowry Prohibition Act, 1961 according to the needs of local conditions.

In the process of making the Dowry Prohibition Act, 1961 more effective the State Governments of Bihar, West Bengal, Orissa, Haryana, Himachal Pradesh and Punjab made the amendments.

Act giving of cash or a collection of useful articles prevailed as a material token of parents' blessings to the new couple.

The next step taken in this regard was the enactment of the Dowry Prohibition Act of 1961. It defines dowry as—

— any property or valuable security given or agreed to be given either directly or indirectly —

(a) by one party to a marraige to the other party to the marriage; or

(b) by the parents of either party to a Marriage or by any person, to either party to the marriage, or to any other person at or before or after the marriage of said parties but does not include dower in the case of persons to whom the Muslim Personal Law applies.

The Act states that if any person gives, takes or abets in the giving or taking of dowry, he shall be punishable with imprisonment which may extend to 6 months, or with fine which may extend to five thousand rupees, or with both. The Act provides that every offence under this Act shall be non-cognizable, bailable and non-compoundable.

162 cases of burning of women reported

NEW DELHI, July 27—A total of 162 cases of burning of women were reported in the Capital between April 1, 1983 and June 30, 1983, the Lok Sabha was informed today.

The causes of such burning include accidents, suicide due to frustration, harassment or murder. Mr. P. Venkstasubbaiah, Minister of State for Home Affairs, told Mr Chintamani Jena.

Replying to a specific question on dowry deaths, the Minister told Mr B.V. Patil and three others that 47 dowry death cases were reported to the Delhi police between January 1, 1982 and March 31, 1983.

For prompt and proper investigation and trial, a special cell had been set up at the police headquarters and a special court designated.

Mr. Venkatasubbaiah told the House that the government will bring forward the necessary amending bill in the current session of Parliament to award deterrent punishment to those found guilty in dowry death cases.

In the Lok Sabha the Minister of state for Home, Mr. P. Venkatasubbaiah, admitted in a reply in supplementaries : "We are not happy with the procedure that is being adopted. We are making efforts to speed up the trial of the culprits."

Mr. Venkatasubbaiah said there were 23 dowry deaths reported by the police in the capital in the last six months. Challans in three cases had been filed in courts. The other cases were under investigation. One case was entrusted to the CBI. Courtesy : Times of India

Law relating to dowry

Keeping in view the historical reason for giving dowry as compensation for denying daughters their share in ancestral property the Hindu Succession Act of 1956 was enacted to give rights to women in the ancestral property.

It introduced equal rights of succession between male and female heirs. It was the first concrete step towards giving equal rights to woman. Inspite of this

The Parliamentary Joint Committee

The dowry system, despite the operation of Dowry Prohibition Act, 1961 and other legislations has continued to grow throughout the country and the burning of newly wed girls for reasons connected with Dowry was on the increase. Sensing the gravity of the problem a Joint Committee of the Houses (Lok Sabha and Rajya Sabha) headed by Shrimati Krishna Sahi was appointed in January 1981, to examine the question of the working of the Dowry Prohibition Act, 1961. The Committee presented its report to the Parliament on 11 August, 1982.

Among other things the Committee noted that the Central enactment namely the Dowry Prohibition Act, 1961 has not only failed to eradicate the evil but to achieve its objective. It observed that there appears to be mainly two reasons which can be attributed for this failure. Firstly, under the Act the presents given are not to be deemed as dowry unless they are made "as consideration for marriage" of the said parties. Secondly, the Court, which is competent to try offences under the Act by virtue of Section 7(a), cannot take cognizance of any offence except on a complaint made within one year from the date of the offence. The parents or the guardian of the bride do not set the law in motion in the interest of the girl. The invitees, the witnesses to the commission of offence hardly come forward to lodge a complaint. The Act did not, therefore, have the desired effect of even curbing the evil not to speak of its eradication. Some of the important recommendations of Joint Committee are given on page 14.

Present position

The Parliamentary Joint Committee has observed that the dowry is an all India phenomenon. Dowry is practically practised among almost all the Castes of Hindus in all States. The Communities and groups which were relatively free from the menace of this custom today look upon dowry as a prestige symbol. There is, in fact, no difference these days in the pattern and motive of conspicuous consumption and dowry, either religion-wise, region-wise or otherwise The rich buy their daughter's future and the only sufferers are men of honest and moderate means who face difficulties in finding suitable matches even for their talented and beautiful girls. For this reason girls of middle class families are taking up jobs in order to earn their dowry. The higher dowry represents the prestige and status of the family in the society. There are well-defined grades of dowry for men in different trades and professions. Indian society is approaching towards commercial relations instead of human relations inspite of its religious and social philosophies which emphasize the importance of human values.

Reasons for the perpetuation of dowry

The factors responsible for the perpetuation of the evil of dowry are numerous and varried.

1. The traditional society where orthodox views still prevail over new ideas has given lease to dowry system.
2. Dowry is attached with the self-respect of bride and status of bridegroom.
3. The influence of black money and unaccounted earnings on society.
4. A new class of new rich has emerged that buys a daughter's future with dowry to enhance its own social status by entering into marriage alliances with families of high status.
5. An educated girl and her parents aspire for a better qualified boy than the girl. An educated boy who has acquired a lucrative source of earning in life expects a higher amount of dowry.
6. The parents unable to meet the demands of dowry for their daughters are forced to ask for dowry for their sons.
7. The separation of sons from parents due to occupational or other reasons make parents to ask for dowry in order to discharge their liabilities and future security.

The Committee on the status of women in India observed "the educated youth is grossly insensitive to the evil of dowry and un-ashamedly contributes to its perpetuation". The Joint Committee is also of the opinion that spread of education has hardly had any liberalising influence on the minds of the people in respect of dowry. On the contrary education has increased the demand for dowry both in rural as well as in the urban areas.

Inspite of legislations in this regard the dowry evil is assuming much higher dimensions. One reason for this is the lack of enforcement of legislation. Though the Hindu Succession Act, 1956 is in operation but the sisters submit their share in favour of their brothers.

In case of Dowry Prohibition Act, 1961 the parents or guardian of bride are reluctant and unwilling to make a complaint in the interest of their daughter. They fear the victimisation of their daughter for complaint.

The Acts therefore did not have the desired effect to curb this evil.

Investigation of dowry deaths

The Police has been instructed to take serious view of all accident cases in suspicious circumstances of young married women. Only a police officer not below the rank of Deputy Superintendent of Police or Assistant Commissioner of Police can investigate the case related to dowry.

Presence of two doctors is must to conduct Postmortem reports in such cases.

Special Magistrates have also been detailed for recording the dying declaration.

A special cell in Delhi Police has been set up under the supervision of a Deputy Commissioner of Police. This cell will deal with the incidents of dowry deaths.

Role of voluntary agencies

The Directorate of Social Welfare, Delhi Administration has set up an Anti-Dowry Cell. The function of the Cell is to create anti-dowry opinion in society through Radio, Television and other media.

The Voluntary Action Bureau set up by the Central Social Welfare Board is actively involved in providing the preventive and rehabilitation services to the victims of dowry atrocities. In this activity it also gets the co-operation of various voluntary organisations.

Evils of dowry

If the Dowry menace does not stop the other evils may start growing in the society.

1. The spirit of dowry is against the goal of a socialistic society.
2. The dowry institution gives support to the belief that males are superior to females. The so-called equality of status and opportunities between the sexes guaranteed by the Constitution of India is completely nullified by the social evil of the dowry system.
3. The spreading of dowry like an infectious disease is posing a serious threat to the moral fabric of the nation.
4. The wasteful expenditure on marriage is also inflationary in character. The heavy debts at exorbitant rates of interest worsens the financial position of the girl's parents.
5. This dreaded evil forces many girls to remain spinisters and some are compelled to commit suicide.
6. Even men of honesty and integrity indulge in corruption to acumulate money to be given as dowry.
7. The practice of dowry has forced many girls to indulge in immoral and unethical activities to earn money for their dowry. It leads to the degradation of moral values.
8. The system of dowry reflects on the marital life of the young couple. It breeds hatred and contempt for each other which may be enough to ruin their married life.
9. Dowry encourages the belief that regards the value of women's work in the home as non-productive and it helps perpetuating the inferior status of women in India.

Need for a strong public opinion

The transformation of this single problem into a hydra-headed problem may ruin the social fabric of the country. So the evils of the dowry system need to be attacked on all the fronts—social, economic and legal with appropriate measures. This evil cannot be eradicated unless social consciousness revolts against it.

Late Pt. Jawaharalal Nehru, the then Prime Minister stated during the course of a debate on the Dowry Prohibition Bill at Joint sitting of both Houses of Parliament on 6 May, 1961 :—

> "Legislation cannot by itself normally solve deep-rooted social problems. One has to approach them in other ways too, but legislation is necessary and essential, so that it may give that push and have that educative factor as well as the legal sanctions behind it which help public opinion to be given a certain shape."

Some of the important recommendations of the Joint Committee appointed to examine the working of the Dowry Prohibition Act.

What is dowry ?

The Committee felt that it may neither be possible nor desirable to put any standard ceiling on dowry. Parents made voluntarily i.e., without compulsion or coercion directly to the bride by her parents, relatives, friends etc. at or before or after the marriage in the form of cash, ornaments, clothes, or other articles not exceeding in value 20 per cent of the income, during the year preceding the date of marriage, of the parents of the bride or other persons bearing the marriage expenses on the bride's side, or fifteen thousand rupees, whichever is low, should not be deemed as dowry.

The present made voluntarily to the bride by the bridegroom, his parents or relatives should also not be treated as dowry.

To avoid element of compulsion for dowry from the bridegroom's side the Committee has suggested a ceiling on presents to be made to the bridegroom. Such presents made voluntarily and without compulsion or coercion, either directly or indirectly to the bridegroom or his relations at or before or after the marriage, the value of which does not exceed a total of Rs. 2,000|- or 3 per cent of the annual income (in the year preceding the date of marriage) of the bride's parents or those bearing the marriage expenses, whichever is less, should not be treated as dowry.

Stress on simple marriages

To curb ostentation in marriage ceremonies, the Committee suggested that such expenses on betrothel or any other ceremonies connected with marriage and other incidental matters should not exceed 7 per cent of the annual income of the bride's parents or Rs. 3,000|- whichever is less. Those violating this should be punished with imprisonment upto 3 months and a fine of upto Rs. 5,000|- or twice the amount in excess of the limit, whichever is more.

Protecting the Bride's Interest

To ensure that gifts given to bride are exclusively for her benefit, these should be listed and registered in her name.

In case of bride's death under suspicious circumstances and without issues, such presents should revert to her parents, failing which to their heirs. If she dies leaving any issues behind, the presents should go to the issues. In case of divorce, they should revert to her. To avoid misappropriation and making bride's position secure, such presents should neither be allowed to be transferred nor disposed off for a minimum period of five years from the date of marriage without the prior permission of a competent court.

Punishment

The giver of the dowry should not be equated with the taker and hence he is not liable for any punishment.

On the other hand, those who take or abet the taking of dowry should be given deterrent punishment of a minimum imprisonment of six months, extendable upto two years, and a fine of upto Rs. 10,000|- or an amount equivalent to the amount taken as dowry, whichever is more. The court, trying the offence, may, however, be allowed the discretion of lessening the minimum duration of imprisonment, i.e. six months, for adequate and special reasons in deserving cases.

Similarly, those demanding dowry should also be punished with imprisonment for a minimum period of six months, extendable upto two years, and fine of upto Rs. 10,000|-. Here also the Court may have the discretion of lessening the term of imprisonment beyond the minimum limit of six months in deserving cases.

Husbands denying conjugal rights to the wife, or inflicting mental or physical cruelty, on grounds of no or insufficient dowry, should be punished with imprisonment of upto one year or fine of upto Rs. 10,000.

Anticipating the possibilities of dowry being given in reality in violation of these provisions, the Committee has suggested that where such dowry has been given and is held by any person other than the woman entitled to it, it should be returned to her within 3 months failing which such person|persons are punishable with imprisonment for a minimum of six months, extendable upto 2 years or with fine upto Rs. 10,000 or both.

In case of the woman dying before receiving such gifts or property, they should devolve to her issues, if any, or to her parents or their heirs. Where the woman dies under suspicious circumstances, the property inherited by the issues should be looked after by a guardian, appointed by the Court, till they attain majority.

Cognizable offence

The Committee is in favour of making the offences under the Dowry Prohibition Act cognizable subject to the condition that no arrest shall be made without a warrant or an order of a magistrate. To facilitate compromise at any stage, the offences should also be made compoundable, subject to terms and conditions the Court may impose, with provisions of reopening the case for infringement of the terms and conditions of such a compromise.

Lodging complaints

Apart from the parents and relatives of the girl, the police and registered social organisations should be authorised to lodge a complaint. There should not be any time limit for lodging such complaint, as in many cases, the offences come to light after a long period of marriage.

Family courts

Family courts should be established to deal with family matters, including the offences arising out of the violation of Dowry Prohibition Act. Till such time, the family courts are established, the offences under the Act should be tried by any court not inferior to that of a Metropolitan or Judicial Magistrate, First Class.

Need for an enforcement machinery

The Committee has pointed out the need for having an enforcement machinery for proper enforcement of the Dowry Prohibition Act and for providing necessary help to the dowry victims to prosecute their cases. In the Committee's view it should be obligatory on the part of the State Governments to appoint Dowry Prohibition Officers for different local areas in their respective State. These Officers will be responsible for preventing contraventions of the Act, to collect evidence and to advise and render all possible help to dowry victims. A five-member non-official advisory body of local well known social workers, including women, should be associated with each such officer. If necessary, these officers may be vested with powers of a Police Officer.

Jurisdiction

The Provisions of the Dowry Prohibition Act should be made applicable throughout the country including Jammu and Kashmir. □

(Curtesy : Research & Reference Division)

Coordinated project on butterfly farming

An expert group has been set up to develop an All India Coordinated Project on Butterfly Culture and Farming.

The step has been taken because of rapid depletion of butterfly wealth in India to an alarmingly low level. About 520 species, sub-species and races had become rare or very rare nearly 25 years ago. It works out to be about 20 per cent of the known fauna of Indian region. The situation now is much worse.

The factors responsible for this situation are habitat destruction by deforestation for urbanisation, industrialisation and agriculture, over-collection for scientific studies and commercial exploitation. All these factors directly influence the ecological balance affecting not only the butterflies but the entire fauna and flora. Other factors include collection by private collectors.

Formulating Seventh Plan strategies

With three years of the Sixth Plan already over, the Planning Commission has geared up its machinery to formulate policies, strategies and programmes to be adopted under the Seventh Five Year Plan. For this purpose, the Commission has set up working groups for various ministries and departments, Most of these working groups have been asked to submit their reports by the end of January 1984.

Railways

In the context of the preparation of the Seventh Five Year Plan (1985-90) the Planning Commission has set up a 26-Member Working Group on Railways under the Chairmanship of Chairman, Railway Board.

The terms of reference of the Working Group include:

To review the Sixth Plan of Railways, the achievements and shortfalls and to suggest remedical measures; to project freight traffic demand under major commodity heads expected to be moved by rail during each year from 1985-86 to 1989-90; to project demand for passenger traffic-suburban and non-suburban required to be moved by rail during each year from 1985-86 to 1989-90; to assess the requirement of additional capacity both for rolling stock (wagons, coaches, locomotives) and line capacity which will enable the anticipated freight and passenger traffic to be moved; to recommend programme for production of rolling stock in the production units of the Railways, in the public sector undertakings and in the private sector units to match the requirements as assessed; to assess the adequacy or otherwise of the existing maintenance facilities, their productivity and to suggest measures for improvements; to consider the question of development of human resources; to assess the requirements of funds for the Railways for replacement of overaged assets under different Plan-heads; to assess the productivity of the Railway system and suggest measures for improvements including Research and Development programme, managerial innovations etc; and to assess the requirements of funds for the Railways under different Plan heads for creation of additional capacity to meet the projected traffic demand and separately for development of the Railway network in the country.

Tourism

The Planning Commission has set up a 14-Member Working Group on Tourism with Secretary, Department of Tourism as Chairman.

The terms of reference of the Working Group include :

To review the performance of the Tourism Sector with reference to the Sixth Five Year Plan indicating the achievements and shortfalls together with factors affecting development of tourist traffic; to make an assessment of the foreign tourism markets and to attempt projection of future tourist flows for the 7th Plan and also to give perspective for 10 years i.e. beyond the 7th Plan period; to review the work done by the present tourist publicity and promotion set up abroad and their impact on tourist traffic with a view to recommending policy measures for tourism promotion abroad; to make an assessment of the gross and net foreign exchange earnings of tourism sector both direct and indirect and steps considered necessary for streamlining the methodology for making these estimates; to make an assessment of the requirements of infrastructure like hotel accommodation of appropriate type. To study the development of cheap accommodation suitable for middle class travellers, budget tourist etc.; to make an assessment of the transport and other facilities commensurate with the projected volume of tourist traffic for each year of the plan period; to review the incentives and other concessions given to tourism industry (hotel and Travel Agents etc.) and to indicate whether it is sufficient to cater to the promotion of tourism; to estimate direct employment expected to be generated for the different categories of staff during the execution of various schemes|programmes in each year of the Plan and after their completion; to assess the requirements of trained manpower for tourism and catering industry, to review the working of the training institutes and to project the requirements of training facilities; to assess the material and equipment requirements and the extent to which these could be available indigenously, separately from the public and the small scale sector and import requirement; to review the role of Central Government and State Governments in the development of tourism and suggest changes if necessary; and to review the role of public and private sector in the development of tourism.

Art & Culture

The Planning Commission has set up a 25-Member Working Group on Art & Culture with Shri Mohan Mukerjee, as Chairman and Shri J. N. Sharma, Dy. Educational Adviser, Ministry of Education & Culture as Member-Secretary.

The terms of reference of the Working Group include :

> To review the position of institutions in the fields of Archaeology. Archives. Conservation Laboratories, Museums, Libraries, Manuscript Libraries, Academics for promotion of performing, Plastic and Literary Arts; to identify the problem areas and suggest remedial measures; to suggest a feasible perspective of development upto 2000 AD particularly with reference to awareness of India's cultural heritage and dissemination of information under the programme of cultural institutions and their linkages with other development sectors, particularly; education, tourism, rural integrated development programmes, tribal arts and crafts, natural environment, health, urban and town development; to specify in clear terms the objective of cultural development programmes in relation to national development goals as well as inculcation of an appropriate value system, enrichment and propagation of the diverse Indian Culture and the promotion of national integration through Fairs, Melas; to suggest special programmes for preservation, conservation and dissemination of folk traditions, tribal and rural arts and crafts at the Central and State levels; and to make recommendation regarding policies and programmes for ensuring the availability of an adequate scale of inputs, particularly suitably qualified personnel, functional building, equipments, libraries, etc. in each sector of cultural development.

Chemicals and Pesticides

Government have set up two Working Groups— an 18-member Group on Chemicals and a 17-member Group on Pesticides.

According to the terms of the reference, the Groups will work out an analysis of the capacity and expected production in 1983-85 in relation to the targets envisaged for the Sixth Plan.

The Groups will also make an estimation of the demand during the Seventh Plan and recommend targets of capacity and production during 1989-90. The assessment of demand at the turn of the century will also be made by the Groups.

The break-up of target between public and private sector will be indicated.

The Working Groups will also suggest the most advantageous way of achieving the targets whether through modernising and expansion of the existing units or through establishment of new units.

The two Groups will also make an estimate of investments necessary for achieving the capacity, and the foreign exchange component together with year-wise phasing of the investment in the Seventh Plan.

The terms of reference also include making recommendations for the role of public and private sector; policy framework for achieving the targets: utilisation of by-products suggesting ways for eliminating all existing subsidies if any; possibility of imports and exports and the requirement of equipment and machinery.

The Groups will also work out an estimate of employment for ancillary industries and policy for ancillarisation with a view to providing a growing role for the small scale sector.

Education

The Planning Commission has set up a 21-Member Steering Group on Education under the Chairmanship of Smt. Sarla Grewal, Secretary, Ministry of Education and Culture.

The Steering Group will critically examine the present overall position, progress and problems in relation to the Educational Development in the country. On the basis of the above examination and the reports of the Working Group, it will recommend specific goals and objectives of educational and cultural development in the Seventh Five Year Plan and Policies, Strategies and Programmes to be implemented during the Seventh Plan with details of personnel, physical, financial and other requirements for the achievements of the specified objectives and goals.

Department of Atomic Energy

The Planning Commission has set up a 15-Member Working Group for the Department of Atomic Energy (Research & Development) with Secretary, Department of Atomic Energy as Chairman.

The terms of reference of the Working Group include :

> To review and assess the actual progress and achievements during the Plan period 1980-81 to 1984-85 of the Research and Development programmes of the Department of Atomic Energy; to recommend policy framework for the next Five Year Plan period beginning 1985-86 for S&T development in the Atomic Energy area, keeping in view the importance attached to employment generation; to formulate a Five Year Plan (1985—90) for S&T programmes of Department of Atomic Energy indicating targets and financial outlays required during each year of the Five Year Plan; to identify means and mechanisms through which the elements of various basic technologies acquired while pursuing the Atomic Energy Programmes can begin to influence and enrich other technical and industrial operations in the country; to assess the level and quality of linkages with educational institutions, other scientific agencies and industry and suggest measures for improving the same.

Industrial & Mineral programmes of the Department of Atomic Energy

The Planning Commission has set up a 12-Member Working Group on Industrial and Mineral Programmes of the Department of Atomic Energy with the Principal Secretary, Department of Atomic Energy as Chairman.

The terms of reference of the Working Group include :

> To review and assess the actual progress in the development and commercial production of industrial products and minerals required or handled by the Department of Atomic Energy upto 1984-85; to review the technologies developed by the Department of Atomic Energy which are capable of commercial exploitation and to suggest the manner in which these potential capabilities could be utilised for meeting the anticipated needs of the economy; to undertake a review of the various schemes and projects undertaken by the Department of Atomic Energy during the Sixth Plan period and to suggest specific projects for the next plan period alongwith the Plan outlay required for the purpose; to indicate the yearwise phasing of production and investment required for Seventh Plan period i.e. 1985 to 1990 alongwith the break up of the outlay required into budgetary allocation, internal resources of the public sector undertakings and the financial assistance required from term lending institutions; to indicate the extent to which import may be necessary and the yearwise phasing of foreign exchange required; and to make an assessment of the export potential of the products being manufactured by the public sector undertakings under the Department of Atomic Energy and to make a realistic estimate of exports, yearwise for the Seventh Plan period.

Urban Development

A Working Group on Urban Development under the Chairmanship of Shri Prakash Narain, Secretary, Ministry of Works and Housing will formulate policies, strategies and programmes to be adopted under the Seventh Five Year Plan includes representatives of some Union Ministries and State Governments and non-official experts.

The group will define the role which the Urban Development will play in economic and social development of the country for the 5-year period—1985—90 in the light of the projected pattern of urbanisation of the next 15 years. In this context, it will examine the reports of the four Task Forces on Housing and Urban Development set up by the Planning Commission and make suggestions for the implementation of such of those recommendations as are considered to be acceptable.

The group has been asked to estimate the resources needed for the provision of infrastructure, with special reference to the needs of the urban poor in all sizes of cities and towns in all the States, in the light of an analysis of the available potential resources of the urban local bodies to recommend a feasible Seventh Five Year Plan outlay for Urban Development on this basis. It will examine critically the operation of the Slum Improvement Scheme and identify the main problems related to norms, cost ceiling legislative and administrative framework, tenure, maintenance and community involvement.

The group has specifically been asked to identify the special problems of Schedules Castes|Scheduled

Tribes and other disadvantaged groups in urban areas and suggest modifications in the existing programmes, wherever necessary, in order to ensure that these communities derive the maximum benefits.

CSIR

The Planning Commission has set up a 17-Member Working Group for the Council of Scientific & Industrial Research with the Director General, CSIR as Chairman.

The terms of reference of the Working Group include :

> To review and assess the actual progress and achievements upto 1984-85 of the various S&T programmes of CSIR; to recommend a policy framework for the next Five Year Plan period for S&T development in general and specifically for programmes under CSIR keeping in view the importance of ensuring that indigenously developed process know-how and design and fabrication capability could be used for most of the requirements of Indian industry particularly for major infrastructural sectors; to formulate the S&T programmes of CSIR for the Seventh Plan period indicating target and financial outlays (Plan and Non-Plan) required each year; to assess the additional employment by categories under CSIR likely to be created during the Plan period and to examine problems of recruitment, training etc; to identify major areas for coordinated research projects; to suggest measures for technology delivery to the backward and rural and hilly areas.

Department of Space

The Planning Commission has set up a 17-Member Working Group for the Department of Space (S&T), with Secretary, Department of Space, as Chairman.

The terms of reference of the Working Group include :

> To review and assess the actual progress and achievements during the period 1980-81 to 1984-85 as compared to the objectives and targets envisaged in the Sixth Plan of the programmes of Department of Space and identify areas where there have been shortfalls and suggest remedial measures; and to identify programmes for development of space technology and its application during each year of the Seventh Plan indicating the physical targets to be achieved taking into account the existing infra-structure and that to be provided; to identify the programmes of interactions with various user agencies, educational sector and other Departments to ensure appropriate utilization of the application potential of the Space programme; to identify means and mechanisms through which the elements of various basic technologies acquired while pursuing the Space programme can begin to influence and enrich other technical and industrial operations in the country; to indicate broad orders of magnitude of investments required (Plan and non-Plan) each year; to indicate the direct employment expected to be generated for various categories of staff in the Space sector in the course of and after the execution of the different programmes for each year of the Plan period and examine problems of recruitment, training etc.; and to indicate the materials and equipment together with the sources by (a) indigenous procurement—from large sector and small scale sector and (b) import.

Science & Technology

The Planning Commission has set up a 18-Member Working Group for the Department of Science & Technology with the Secretary, Department of Science & Technology, as Chairman.

The terms of reference of the Working Group include :

> To review and assess the actual progress and achievements upto 1984-85 of the various Science & Technology programme of the Department of Science and Technology; to recommend a policy framework for the next five year plan period ending 1989-90 for S&T development in general and most specifically for programmes under DST keeping in view the importance of ensuring that benefits of science and technology should begin to make a qualitative difference to the life of all sections of society in the country; to formulate the S&T programmes of the DST for the Seventh Plan period—indicating targets and financial outlays (Plan and non-Plan) required for each year; to assess the additional employment by categories under DST to be created during Plan period and examine problems of recruitment, training etc; and to develop methodologies by which research priorities could be co-related with Plan priorities, proposals—whether for capability building or inhouse research—be screened and the cost benefit of completed research projects evaluated.

Health & Family Welfare

A Steering Group on Health and Family Welfare has been set up for formulating policies, strategies and programmes to be adopted under the Seventh Five Year Plan. The Steering Group will critically examine all aspects and problems relating to the Health and Family Welfare Programmes in the country and give recommendations on personnel, physical and financial requirements necessary for the achievement of Health for All by 2000 A.D. as formulated in the National Health Policy.

The Steering Group headed by Dr. S. S. Sidhu, Secretary, Ministry of Health and Family Welfare, will also co-ordinate, advise and guide the deliberations of the eight Working Groups constituted to identify strategies and policies on different subjects for the Seventh Plan period.

These are: Population Stabilisation and Material and Child Health Care activity, Health Care Delivery Services in Rural and Urban areas, Control of Communicable Diseases and Blindness, Control| Containment of non-Communicable Diseases and review of Blood Banking, laboratory, radiological and other investigative services, Medical and Health Research and Development, Medical Education, training and Manpower Development, Health Education| System of Medicine.

Housing

A Working Group on Housing has been set up. Shri Prakash Narain, Secretary, Ministry of Works and Housing, has been appointed Chairman of the group which includes representatives of the various Union Ministries and State Governments and non-official experts.

The group has been asked to estimate the existing housing shortage in rural and urban areas disaggregated by income groups and suggest an attainable objective for the nation's housing effort for the 5-year period—1985-90 in the light of a 15-year perspective. It will also evaluate the existing social housing schemes in the public sector and suggest modifications, if any, in the working of the schemes.

Insofar as the rural areas and the weaker sections are concerned the group will suggest measures for rural housing keeping in view their special aspects and problems. It will examine the efficacy of Sites and Services Scheme and suggest measures for its improvement. It will consider the possibility of introducing an element of Central assistance for providing construction assistance under Rural House Sites-cum-House Construction Scheme.

The group has also been asked to examine achievements of HUDCO in terms of its norms and schemes, regional distribution of funds and the adequacy of resources in relation to their tasks and to suggest methods for expansion of their activities.

The reports of the working group on private housing set up by the Ministry of Works and Housing and the Task Force on "Shelter for the Urban Poor and Slums" set up by the Planning Commission will also be examined by the group with a view to implementing their recommendations.

Road Transport

The Planning Commission has set up a 22-Member Working Group on Road Transport with the Secretary, Ministry of Shipping & Transport, as Chairman.

The terms of reference of the Working Group include:

To review the growth of road transport in respect of passenger and freight traffic during the Sixth Plan period, indicating the cause of any major deviation from the Plan targets together with required remedial measures; to consider the recommendations of various Committees on Road Transport and especially the National Transport Policy Committe while formulating the proposals for the development of road transport; to make recommendations on the role of public sector (State Road Transport Corporations) and private sector in respect of passenger traffic; to recommend measures for improving the efficiency in physical operations and financial viability of the State Road Transport Corporations; to review the subject of Central Government's contribution to State Road Transport Undertakings; to make an assessment of the number of buses and trucks on road required in each year of the next Five Year Plan 1985—90 along with an assessment of the current and committed new capacity for production of buses and trucks to meet this requirement; to recommend a programme for production of transport vehicles for passenger and freight traffic during each year of the Five Year Plan 1985—90 to augment the fleet and replace obsolete vehicles and also measures for adequate maintenance of the fleet; to recommend measures required for improvement and extension of transport facilities in the rural, hilly, backward and border areas; and to indicate the direct employment in mandays expected to be generated in each year of the Five Year Plan 1985—90. ☐

Effort to Protect Sea Turtles

A specialist group has been set up by the Government to examine and review the step being taken by the States and Union Territories for the conservation of sea turtles and recommend further measures for this purpose.

The step has been taken in view of a general decline in sea turtle population endangering their survival. Besides, direct loss due to poaching and incidental catches in fishing activities, turtle eggs are collected by poachers from nests in large quantities for human consumption.

The species is illegally hunted despite the fact that all the five species of sea turtles, found along the Indian Coast, are covered under Schedule I of the Wild Life (Protection) Act, 1972.

To protect the sea turtles, all coastal States and the Union Territory of Andaman & Nicobar Islands have been given special instructions to take effective measures for full protection of all species of sea turtles, particularly during the egg laying and nesting season. ☐

Indian diamonds once again

Dr. S. L. Mandawat

Diamonds account for over 6 per cent in India's total exports and as a Commodity group they are only second to engineering exports in terms of value. Apart from this, cutting and polishing of diamonds is a Cottage industry employing 3.5 lakh workers in Gujarat.

A most fashionably attired brunette appearing in an advertisement for home computers appear in an Italian house journal is wearing lovely diamond drops. These diamonds were manufactured by an unknown diamond cutter working in a dingy cell in a workshop in Surat, world's largest diamond cutting centre, located 5 hours train journey from Bombay. A Japanese bride getting adorned to meet her would be hubby is wearing a fine necklace made of pretty and small diamonds. They have come from India. Heiress to a 100 million U.S. dollars worth property in the Sultanate of Oman, wife of an Arab businessman is embellished in a gorgeous headgear showing over 25 carats of tiny brilliants which number over 2,500 in all. These diamonds were cut and polished in India

The Indian diamond Industry is one of the fast growing industries specialising in the cutting and polishing of small brilliants and eight cuts. Other manufacturing centres of the world find uneconomical. The Indians manufacture diamonds ranging between 20 to 200 piece per carat, which are intensively used by jewellery manufacturers the world over.

India holds premier position

The Indian industry holds the premier position in the world in three respects : (1) in the number of stones cut and polished which comes to 25 crore pieces annually (2) carat weight processed and (3) number of persons employed.

The industry provides direct and indirect employment to about 4,00,000 persons, including 3,00,000 artisans, the rest comprising of sorters, graders and others. As against this, the present labour force involves in cutting and polishing of diamonds in Belgium is around 6,000 and in Israel around 8,000.

The diamond export industry is one of the leading foreign currency earners for India in terms of value added. This spectacular growth started from 1968-69 when its exports doubled from the previous years level of Rs. 18 crores to Rs. 34 crores. There have been two peak years in the export of gem diamonds from India viz. 1978-79 when exports reached Rs. 694 crores and in 1981-82 when the exports were Rs. 727 crores.

The diamond industry has around 2,500 registered exporters. Of these, 63 are 'sight holders' (persons getting rough diamonds directly from the supplier) of the Diamond Trading Company, London, out of its total of 300 in the world.

Concentrated in Gujarat

Most leading Indian diamond exporters have their own manufacturing enterprises but a large proportion of gem diamond exporters depend on decentralised workshop and units undertaking cutting and polishing on piece rate basis. There are nearly 60,000 to 70,000 cutting units in India. The major cutting centres for gem diamonds include Surat, Navsari, Bhavnagar in Gujarat, Malad, Borivli, Goregaon and Jogeshwari which are Bombay suburbs, and some area around Trivandrum, in Kerala. Almost 90 per cent of the diamond cutting and polishing industry is centred in Gujarat.

The Indian diamond industry depends entirely on imported raw materials and has an intake of about 27 million carats, half of the world's total mined output of rough diamonds annually. Nearly 80 per cent

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BEWARE !

Your food may be a killer

What are you eating? poison? nourishing food? Life giving food? You may not be aware that the food you consume may turn out to be a killer.

The government has been doing its best to provide quality foods to consumers. Some of the steps taken by the government have been highlighted in this article.

THE ENVIRONMENTAL causes of food contamination may be due either to naturally occurring toxicants or manmade environmental causes. Naturally occurring toxicants can be found in Khesari Dal (Lathyrus Sativa), causing paralysis of the lower extremities and the latter can cause myo-cardial fibrosis of heart.

Manmade causes include chemicals like nitrates used as food preservatives which are known to cause even cancer. Even fertilizers and pesticides used indiscriminately in agriculture cause ecological and health risks. Excessive DDT intake through food can cause hepatic and neutral disorders.

Bacterial contamination of food is largely a consequence of lack of general hygiene and sanitation. In improperly stored foodgrains, fungus growth may produce deadly mycotoxins such as aflatoxins. Many deaths have resulted from consumption of corn contaminated by aflatoxin in western Indian States in the recent past.

Naturally occurring toxicants

Toxi Amino Acids and their derivatives—These are closely associated with Khesari dal (Lathyrus Sativa) and the intake of this dal as a staple food for long periods can cause Neurolathyrism, a disease involving paralysis of the lower extremities in young males. The disease is known to occur in several countries in Middle East, parts of South-East Asia, Bangla Desh and India. It continues to be a public health problem in several parts of Central India, causing loss in productivity in agriculture. The annual production of Khesari dal in India is one million tonnes.

The disease can be controlled through ban on cultivation of Khesari dal and its sale, nutrition education to reduce the intake of lathyrus to a minimum, measures for the detoxification of the seed and genetic approach for the selective breeding and cultivation on lowtoxin or toxin free lines. The first two measures have been partly successful.

2. Haemagglutinins—some of the edible plant seeds have certain components which are proteins in nature and have the property to agglutinating red blood cells. These proteins are called haemagglutinins. These agglutinins, a classical example of which is ricin present in castor seeds, lead to growth of depression, reduction in food intake and death. The notable changes observed in such cases were intensive inflammation with destruction of epithelial cells, odema and haemorrhages in lymphatic tissues etc. Haemorrhage occurs in stomach, intestinal wall and other organs. Of the twenty commonly used Indian pulses, 14 have been found to exhibit positive reaction towards haemagglutinating activity.

3. Flatulence Factors— Bengal gram, Soyabeans, Lima beans and Navy beans are some of the legumes rich flatulence factor. These factors are known to survive ordinary cooking. Studies have indicated that consumption of flatulence producing foods produce large quantities of gas in the intestine and much of the gas formed is carbon dioxide.

4. Toxic Polyphenols — Gossypol is a polyphenolic pigment in cotton seeds, which is an important commercial crop valued for the cotton, edible oil

and the protein rich cake. The toxic effects of gossypol lead to lowering of nutritive quality of the protein in the cake, besides causing other ill effects, loss of appetite, growth depression, diarrhoea, cardiac irregularity, haemolysis in gastrointestinal tract, congestion|odema of lungs etc.

Measures to overcome the adverse effects of this compound have been under trial and some of these methods commercialized.

5. Toxic Alkaloide—several alkaloids are present naturally in edible plant foods and some of them are recognized to be toxic to livestock and humans. One of the most potential dangers to human health from these alkaloids occurs when the seeds containing these alkaloids get contaminated with staple foodgrains meant for consumption. Mechanical harvesting procedures also increase the danger of such weed seed contaminants in foodgrains. Another source of poisonous alkaloid is solanine found in fresh green portions of potatoes. Several species of mushrooms also contain toxic alkaloids. Minor incidences of mushroom poisoning in different parts of rural India go mostly unrecorded. The transient symptoms include nausea, vomitting, and other gastro-intestinal disturbances.

6. Veno occulusive Disease—this disease in man is characterized by sudden onset of abdominal distention with ascites and slighly tender, enlarged, smooth and firm liver.

7. Antivitamins in Foods— The antivitamins combine with some of the enzymes and prevent vitamins from doing so. Increasing amounts of vitamins in diet will reverse the adverse effects of the inhibitor.

Microbial contaminants

Bacterial Contaminants : Foods that are particularly potential source of poisoning due to bacteria are meat and meat products, poultry, milk and milk products, various sweet preparations, fish and to some extent fruits and vegetables. Food-borne disease and its epidemology involves the entire chain of food production, processing and distribution. The onset of the disease may be any time between 2 and 48 hours and the duration of illness is short, from one to three days.

Toxins in edible oils

The daily intake of edible oils in a large majority of the Indian population is very low, ranging from 10-20 gm. per adult per day. And despite the low fat intake in developing countries, different types of health hazards are encountered. These arise out of basic shortage of edible supplies and consequent malpractices in commercial supplies leading to adulteration. Some of them arise out of processing methods for oil extraction. Yet another category could probably arise out of a selective consumer preference for a particular source of edible oils. Methods of processing and detoxification of them are available. From the health hazard point of view, adulteration of edible oils is a serious problem. The major health hazards from edible oils are:

(a) Naturally occurring toxic constituents;

(b) Accidental or wilful adulteration of contaminants;

(c) Toxins arising through processing (solvent residues);

(d) Residues of pesticides which have been improperly used in the crop; and

(e) Toxins through microorganism which attack oil seeds.

Chemical contaminants

Common pests which include insects, fungi, rodents etc., are responsible directly or indirectly for causing damage to man, animals and plants. These are of considerable economic significance. One of the most effective methods for control of these common pests is the use of pesticides. Pesticides are effective on insects, either through direct contact or through systemic action.

Liberal application of pesticides leads to the problem of pesticides residues in various foods, both of plant and animal origin. The problem appears to be more severe when pesticides accretion takes place rather than when the reidues are left behind. This is because of the basic concept in toxicology that "dosage determines poisoning".

Washing the contaminated commodities and peeling of fruits and vegetable may be an effective method of reducing residue levels. Average dietary intake of DDT of an adult Indian has been calculated to be about 0.2664 mg. for a 50 kg. man, which is the acceptable daily intake of DDT through dietary source.

The heavy metal contamination of the environment is a serious problem mainly because of the industrial pollutants being let out to the surrounding areas or due to eating of contaminated foods. The pollutants may also enter the human food chain through the animals, milk or plant vegetation grown in the area. It was found that in North Bombay milk samples from cattle grazing the banks of kalu river have an average 10 microgames of mercury per litre. Even vegetables such as cluster bean grown in the area was found to have 'undesirable levels' of mercury. In another study, it was found that out of the 30 species of fish from seven sources in Bombay and Thane, at least seven species of fish contained higher mercury levels. The contaminating source is the industrial effluents.

Miscellaneous contaminants

A variety of insects and mites attack foodgrains during pre and post-harvesting stages leading to both qualitative and quantitative damages. The qualitative changes lead to denaturation of proteins, loss of vitamins specially of the B Group, deterioration of cooking and baking quality, Organoleptic change and loss of appetite.

(*Continued on page* 29)

Integrated education for disabled children

Uma Joshi

A child's mental ability grows in proportion to the stimulation and care that a child receives. Handicapped children educated in normal school with normal children get better stimulation to learn different skills. Integrated education scheme for disabled children is a step in the right direction.

INDIA HAS witnessed phenomenal expansion of educational opportunities since the attainment of independence. However, the disabled children have not yet benefitted in any substantial manner from the growth in educational facilities. Education of handicapped children, including mentally retarded, has always had obstacles. Also there are misconceptions held by health, education and social welfare workers. The common misconceptions are that handicapped children ultimately become more dependent and non-productive. It is therefore believed that scarce national resources should not be wasted on them. Further, it has been our misconceived feeling that the education of handicapped children requires highly specialised people working in a multi-disciplinary team and as such, it must essentially be very costly. May be, precisely for these wrong notions we have not been able to involve clinical and educational specialists in programmes of training and education exclusively meant for the handicapped children.

Common schools

It is encouraging to note that the new National Policy on Education has recommended the placement of such children in regular schools so as to provide them integrated education with normal students. The integrated education will take care of the different needs of various categories and types of disabled children. The objective is to place the disabled children in ordinary schools for imparting education with the help of special teachers, aids and other resources. For fulfilling this objective, an array of the necessary infrastructure by way of training of teachers, provision of equipment and books, resource rooms, assessment facilities, etc., are some of the basic prerequisites. Hopefully, the parents and their handicapped children will be greatly relieved when the latter are transferred to a regular school.

So far, the children with various disabilities have been placed in special day or residential schools. Although special schools have played a pioneering role in the development of techniques and technology designed to deal with the specific problems of many types of disabled children, yet their services have reached only a limited number of children. Integration of handicapped children in ordinary schools with the normal children has a number of social and psychological advantages for the handicapped as well as for the non-handicapped students. It has been found that mildly and moderately handicapped children have gained almost as many skills as would have been expected of normal children. The more severely handicapped group, though it did not do so well, still gained more than twice the skills than would have been expected without stimulation. Apart from these advantages, such a placement is the most effective way of providing educational facilities for handicapped children in a large measure.

Centrally sponsored scheme

The scheme ensures that disabled children stay with their own parents and attend ordinary schools like other children. There is no restriction on a particular school covering more than one type of disability under the present scheme. A school may, in view of its existing facilities and capacity, decide upon extending its services to one or more categories of disabled children. There is also no restriction on the minimum number of children in a school for the purpose of introducing integrated education. Since this is a Centrally sponsored scheme, the Central Government will pay the entire cost during the Sixth Plan period. The cost will be assessed on the basis of the criteria set down in the scheme.

The main implementing agencies are the education departments of State Governments. It is their discretion whether to make use of government or private schools or both. They may also utilise the services of national, regional, state or local level agencies in any advisory or inspecting capacity. Each State shall appoint a psychologist as a coordinator of the programme for undertaking psychological assessment of the children and for monitoring their progress on a regular basis. There is also an assessment centre in each State capital or district headquarter or in any other central place which fulfills the prime condition of having 50 or more children in the integrated school system. Where the scheme is yet to be started, an assessment room can be provided for such a district headquarter or a State capital or any other central place. The assessment team may consist of specialists like paediatrician, opthalmologist, ENT surgeons, orthopaedic surgeon, psychologist and special teachers.

Devoted teachers

Training of teachers who can teach the disabled children is the major kingpin of this scheme. There is no doubt that teachers are the strongest role model for children. In fact, we come across several cases where children are more obedient towards their teachers than towards their parents. Unfortunately, in our country, teachers are, by and large, not conscious of their influencing capacity. Therefore, much of what our children, particularly the handicapped ones, could gain from communicating with them is just not there in the true sense.

It is not true that handicapped children can benefit only when there are expensive sophisticated programmes for them. Each handicapped student should be able to find in the school some form of social activity that will need his|her particular interest and that will challenge him|her to successful participation in the activity. A well-organised school can provide many opportunities for its students to participate in self-initiated projects and social activities. Proficiency in the fundamental tools of learning should be achieved in class-room situations which stimulate the child not only to gain skills and knowledge but also to develop attitudes of cooperation, both with adults and with young persons of his|her own age.

Adjustment with peers

When we talk about integrated education for the disabled, it is important to know how socialisation is reflected in the changing interaction of a child in one's peer-group. A young child does not automatically interact too well with peers. Reasons for this are his greater distractability, his lower tolerance of frustrations, his lesser ability to endure delay of gratification, and his inferior skill in communication. These deficiencies can be related to his inability to take on the role of the other children, i.e. looking at things objectively. Mass media like books, comics, movies, T.V., etc., are of secondary importance for influencing children. A child's peers and his school have become the real beneficiaries of the parents decline as a socialising influence. Early adjustment with peers is a good barometer for adjustment in adult life.

The parents or guardians of disabled children also need to adopt a humane approach in treating and educating them. Unfortunately, there have been cases where children, even though not disabled, are being treated so because they suffer from some weaknesses bordering slight disabilities. There are cases where children with weak eye-sight or hearing difficulty have been dubbed as mentally retarded by their school teachers. It is important to remember that teachers have a great responsibility towards their young students. The wrong impression they may have about their students may disturb their adjustment with fellow students and they may eventually turn as jevenile delinquents.

There should be stimulation and education from the earliest possible moment in the child's life to develop to the utmost his limited potential. This line of treatment is based on the time-tested principle that mental ability grows when it is nourished by love and care. Hence, there is a need to be truly affectionate towards the handicapped. To give them education in the same school in which normal children study is the appropriate approach and as such, the Government's integrated education scheme for the disabled is a step in the right direction

At a young age the normal children are in a better position to accept disabled children and this helps the latter to grow in a much normal manner. Although intelligence is an important characteristic, it should not override other aspects of personality of a disabled child who can be successful even with mild or moderate intelligence. At no stage there should be inculcation of inferiority complex in the disabled child in respect of his disability.

All said and done, we need faithful and imaginative implementation of the scheme. The handicapped children need the compassion of a Florence Nightangle or a Mother Teresa who did not fight odds with legal weapons but with courage, kindness and selfless devotion to the cause which was dear to their hearts. The disabled children do not need emotional crutches or legislation which may not be implemented, or funds that may not be used to help them. What they need is graceful, sympathetic handling of their predicament, treating them as part of the mainstream of our life. Therefore, what they need is illumination in their existence in the origin of which they had no part to play and in the battle against which they are handicapped by situation and social attitudes ☐

Basic approach to do a thing

"I do not like people who have no pride and ambition and are just sloppy people. I am not using the words pride and ambition in a small personal sense. Pride of getting money is the Silliest of all types of pride. Pride should consist in doing your job in the best possible manner.

"If you are a scientist, think of becoming an Einstein not merely a lecturer. If you are an engineer, aim at some new invention.

"The mere act of aiming at something big makes you big."

—Jawahar Lal Nehru

Child labour in agriculture

Dr. Mahendra Kumar

India cannot afford to neglect its children who are an important wealth in stock of the nation. It is, therefore, duty of the Government to chalk out programmes to ensure that the country's children grow under that conditions as may provide opportunities for their proper physical, moral and mental development. It will serve our goal of social justice and equality.

AMONG THE CLASS of the rural population that is landless or without capital, the contributions that children can make to household income depend largely on the wages' (and employment) they can command. Labour market structure will determine the response of wage rates, if any to changing labour demand and supply conditions. If labour supply and demand conditions and market structure produce downward pressure on real wages, the productivity of children can, as a direct result, decline to the point where they become net burdens to parents.

The term "child labour" is commonly used in two different ways; First, as an economic practice and secondly, as a social evil. In the first context, it signifies employment of children in gainful occupations with a view to adding to the labour income of the family. It is in the second context that the term child labour is now more generally used. In brief, it may be said that child labour means the employment of children in gainful occupations, which are injurious to their physical, mental, moral and social development. Generally a child is considered to be a person who is below 14 or 15 years of age.

The employment of child workers in agriculture is one of the special characteristics of the land owner in the Indian agricultural economy which has been in practice since time immemorial. It arises from the fact that child workers may be engaged by the employer on different types of agricultural operations at lower wages than adult men and also because the indigent parents of the child workers put them on work as it either, serves as a medium of supplementary income to the family or avoidance of consumption expenditure to the extent the child has his board and loging with the employer. It i natural that people from lower strata of the society—of low castes, low income and low educational attainment send their children for work to supplement the meagre family income, instead of sending them to school for education. The children of these families have got only two choices—either to work or to face starvation. Due to extreme poverty and starvation like situation in many families children start working at a very early age.

Socio-economic situation of the child worker

The families of these children are in great economic hardship and as a matter of fact, due to meagre family income, the children of these families have been compelled to join the labour force to supplement the family income. Majority of the families had not got any fixed asset which could have given them regular income and they used to earn their living by doing physical labour. Most of them have had not even homestead land or if had even the cultivable land, moreover, due to the lack of inputs the productivity of land of these families was very small and consequently income derived from the cultivation was also very meagre. Most of the families were in debt of some form. These loans were taken mostly for consumption purposes, marriage ceremonies or for medical purposes. In some cases the agricultural child labour was kept with the land owner to whom the family was indebted. Seeing the socio-economic situation of the child workers in agriculture, it is clear that utter poverty or the fear of starvation compels them to struggle to eke out a living, instead of enjoying the childhood or educating themselves during the formative period of their lives.

Nature of child work in agriculture

It has been tradition from the very earliest times that children were to perform some work both in the home and in the fields. In the olden days, the children of tender age performed toil some work along with the adult agricultural workers. In the medical period children were put as trainees under their parents to learn their craft. This tradition is also noticed now a days. Children do the agricultural work to help their parents. In agriculture, children do work in the capacity as helpers, during sowing, weeding, harvesting and thrasing operations, according to the earlier reports of the Royal commission of labour.

Proportion of child labour in agriculture

The first All India Agricultural Labour Enquiry conducted by the Ministry of Labour pointed out that in 1950-51, the children consituted 4.9% of the total agricultural labour force in the country. In 1956-57, this percentage was increased to 7.7. The Ministry of Labour also conducted a Rural Labour Enquiry during the period October 1964 to September 1965. The final report of this enquiry published in 1975 points out that the percentage of child agricultural labour households decreased from 7.7% of total agricultural labour in 1956-57 to 5.8% total labour in 1964-65. This enquiry also points out that less than 60 thousand children were those who were working in agricultural labour but they did not belong to agricultural labour households. The number of child agricultural labourers raised from 13.21 lakhs in 1950-51 to 17.58 lakhs in 1964-65 and 45.86 lakhs in 1971. According to 1971 census, about 230 millions children under 14 years are in existence in India, which is 42.02% of total population of India. About 10.74 million children are in employment which constitute 4.7% of the total child population and 5.9% of the total labour force in India. The census also pointed out that about 42.7% of the child labour are working in agriculture constituting 9.7% of the total labour force in agriculture in this country. Thirty six per cent of child labour are cultivators 8.2% of total child labour are employed in live stock, forestry, fishing, hunting, plantations orchards etc. constituting 20.6% of the total labour force in these activities. Of the total child labour in India 93% of the total child labour force are in rural areas, whereas only 7% of the total child labour are in the urban areas.

Agriculture child labour, a cheap commodity

Mostly employers in rural areas think that a lot of work can be done by the children in their establishment and this labour of children is very cheap labour in comparison to that of men. In fact, it ensures them more margin of profit over less investments. But sometimes enhanced demand of labour increases the demand of children e.g., in agricultural harvesting season when adult workers are not available to cope with the demand.

In India children of every young age do domestic work because these children are very cheap. The rich land owner families in rural areas especially keep little boys and girls as domestic servants from 8 to 14 age group which is the age of eating and playing. They get little pocket money and food from their masters.

Employment of child labourers

The employment of child labour in agriculture in the context of India is a peculiar one. Majority of the child labourer in agriculture are casual workers. Casual child workers are more often employed for harvesting, weeding and transplating operations and for spreading the manure. Some of them also work as non-agricultural workers. Such as earth work on roads, well, building etc. in rural areas. So far as employment was concerned, child labour in agriculture were employed on wages for 165 days in 1956-57 as against 150 days in 1950-51.

Wages of child workers

The wage structure in agriculture is a complex one due to the wage differentials as among different agricultural operations and the irregular payment of wages, different modes of wage payment and the rigidities relating to tradition and custom often leading to exploitation of workers. It is very distressing to find that though the child workers work very hard, their earnings and wages are very low. It arises from the fact that child workers may be engaged by the employer on different types of agricultural operations and wages for different operations in agriculture differ according to the nature of work, the strain involved, the duration of work and conditions under which the work is to be performed. There is relatively higher wage rates in transplanting but the child labour are paid meagre amount for such type of work.

The I.L.O. convention on Minimum Age (Agriculture), 1921 provides that children under the age of 14 years shall not be employed or work in any public or private agricultural undertakings, save outside the hours fixed for school attendance. If they are employeed out side school hours, the employment shall not be such as to prejudice their attendance at school. The children may, however, be employed for purposes of practical vocational instruction subject to certain restrictions. Similarly the prohibition of employment of children in agriculture does not apply if they work in technical school approved and supervised by public authority.

The convention has not been ratified by the Government of India. The reason is obvious. On account of the unorganised nature of agriculture its provisions are not easy to enforce.

India's most important occupation viz., its agriculture where a considerable majority of children are employed has not been covered by the law relating to child labour. The legislative provisions are also very cunningly violated by the employers due to inadequate enforcing machinery. National commission of labour also admitted this fact that employment of child workers below the prescribed age is also reported to be continuing in far off places and in rural areas where enforcement of statutory provisions is more difficult.

Whether protection of child labour in agriculture should be provided or not against the employers is a matter of debate seeing the present employment problem, poverty and the semi-starved poor agricultural labour's socio-economic condition. Under these situations the child labourer in agriculture is adding something to its own family. And the Indian conditions do not permit to prohibit the child labour in agriculture totally because it will be injurious rather than good in the absence of possible alternatives. It will be, therefore, better that children who are not able to take education or training to get employment somewhere should remain in their work so that they will be saved from being misguided viz. theft etc.

But the children are our important wealth in stock of the nation. Therefore, country cannot afford to neglect its children. It is duty of the government to chalk out programmes to ensure that the country's children and young persons grow under conditions as may provide opportunities for their proper physical, moral and mental development. It might serve our goal of social justice and equality which is aimed by our Constitution.

(Continued from page 20)

of the rough diamonds used by the Indian Industry are presently being supplied by the Diamond Trading Company. The value of an average sight allotted by the Diamond Trading Company to Indian sight holders is around Rs. 220 crores, per month.

The government of India has set up the Hindustan Diamond Company, in which the De Beers have their indirect share holding through the Bank of Bermude, to supply rough diamonds to small and medium scale exporters. The Hindustan Diamond Company is also a sight holder of Diamond Trading Company.

When the demand for diamonds the world over witnessed recession during 1981, India witnessed an increase in the demand for its gem diamonds. The Diamond Trading Company's rough diamond supplies to India were augmented in 1981 while there was an 85 per cent cut in the supplies to Isreal, 65 per cent cut for Antwerp and 60 per cent cut for New York sight holders.

Indian goods

The strength of the Indian Diamond Industry lies in the large work force it has of skilled artisans whose number can increase to 5,00,000 without any difficulty. Small diamonds the world over have been referred to as "Indian goods" because they are not amenable to semi-automatic processes and as such, are manufactured on traditional implements by the Indian artisans. Even other requirements of power, logistics, etc., are minimal. The Indian industry has the capability to enter in the field of manufacturing fencies currently monopolised by the Isreal industry. In sophisticated jewellery the world over, Indian cut gem diamonds are finding more extensive usage. With the expanding world market for jewellery, "Indian goods" are well set to make rapid progress.

India is exploring new sources world wide for supply of rough diamonds in Africa and Australia to feed its ever growing diamond cutting and polishing industry.

The per carat yield from the rough diamonds in the Indian diamond cutting industry comes to about 20 to 25 per cent mainly because the diamonds cut and polished are very small.

Geometrical expansion

The Indian diamond export industry has a credit line of Rs. 120 crores annually which comes to less than 20 per cent of its annual export level. The industry is independent of government of institutional support. Most of the leading Indian diamond exports have offices and sales outlet in cities like Antwerp, Newyork, Tokyo, Hongkong, Singapore, Paris and London.

Almost the entire diamond exports from India are shipped from Bombay port and the diamond export offices are mainly centered in the Opera-House area of the city of Bombay. The 1982-83 export of gem diamonds from Indian has reached Rs. 913 crores. The projection for 1990-91 by the Tandon Committee put the diamond exports from India at Rs. 3,000 crores.

In our planned efforts to raise exports during 1980s the role that diamond exports can play is very important and crucial. Already, during 1978-79 exports of gem and jewellery items (of which diamonds form 97 per cent) have surpassed Engineering exports and once again, looking to the performance of first quarter of 1983-84 during which gem and jewellery products have recorded 79 per cent increase over previous year's quarter, they are once again well set to surpass all other commodities and become number one amongst all items. More than that, in terms of potential, diamond exports have the making of fastest growing exports with geometrical expansion in terms of values reached. All out efforts both on governmental as well as trade level should be made to see that this pace is maintained. ☐

Measures to check economic offences

M. Yunus Siddiqui
Yojana correspondent

Concerted action continued to be taken by the Central and State Governments and Union Territory administrations to check smuggling, hoarding, tax-evasion and blackmarketing under the point 19 of the Twenty-point programme from January 1 to June 30, 1983.

Smuggling

Accordingly, the customs authorities seized smuggled goods valued at about Rs. 41.39 crores during the first six months of 1983 as against the seizures of smuggled goods valued at about Rs. 37.13 crores during the corresponding period of 1982. The seizures in terms of important commodities during the first half of this year comprised gold worth Rs. 153 lakhs, wrist watches worth Rs. 216 lakhs, synthetic fabrics worth Rs. 709 lakhs, silver worth Rs. 923 lakhs, diamonds and precious stones worth Rs. 20 lakhs and other articles worth Rs. 2118 lakhs taking the total to Rs. 41.39 crores. Similarly, commodities wise siezures of goods in terms of their value in rupees for the month of June, 1983 comprised gold (Rs. 53 lakhs), wrist watches (Rs. 33 lakhs), synthetic fabrics (Rs. 114 lakhs), silver (Rs. 156 lakhs), diamonds and other precious stones (Rs. 2 lakhs), and other articles (Rs. 336 lakhs) culminating into a total of Rs. 6.94 crores.

During the same period, the number of raids and searches conducted was 9293 resulting in the seizure of smuggled goods valued at about Rs. 546.43 lakhs as against 10423 raids and searches conducted during the corresponding period of 1982 yielding total goods valued at about Rs. 687 lakhs.

During the said period, 953 persons were arrested and 224 persons convicted for smuggling offences as compared to 1181 persons arrested and 403 convicted during the corresponding period of 1982.

Violation of foreign exchange regulations

The Enforcement Directorate (The Foreign Exchange Regulation Act) continued 1069 vigorous searches during January 1 to June 30, 1983, resulting in the seizure. besides micriminating documents, of Indian currency of Rs. 29.95 lakhs, foreign currencies valued at Rs. 26.95 lakhs, arrest of 73 persons, adjudication of 820 cases, 40 prosecutions filed in courts and 48 prosecutions ending in conviction as against 937 searches conducted, Rs. 61.56 lakh Indian currency seized, Rs. 22.07 lakhs worth of foreign currency seized, 51 persons arrested, 926 cases adudicated, 60 prosecutions filed and 73 prosecutions ended in conviction during the corresponding period of 1982. The Directorate conducted 195 searches during June, 1983, resulting in seizure, besides micriminating documents, of Indian currency amounting to Rs. 12.48 lakhs and foreign currency of the value of Rs. 10.85 lakhs approximately. Eighteen persons were arrested under the Foreign Exchange Regulation Act, during the month. Besides, adjudicating 110 cases departmentally, in 13 cases of prima-facie violation of provisions of the Foreign Exchange Regulation Act, prosecution was launched in courts and eight such prosecution cases ended in conviction by courts during the month.

Detention under COFEPOSA

During the first six months of 1983, the number of detention orders issued under the provisions of the Conservation of Foreign Exchange and Prevention of Smuggling Activities Act (COFEPOSA) was 314 (provisional) and the number of persons detained was 236. The number of retention orders issued during the corresponding period of 1982, was 282 and the number of persons detained was 250.

Evasion of excise duty

Sustained efforts were continued to be made to check evasion of Central excise duty during the three months of April, May and June, 1983. The tentative figures of the total number of cases detected during the first quarter of the current financial year is 1468 and the amount of central excise duty sought to be evaded comes to Rs. 903.69 lakhs.

Evasion of direct taxes

The Central Board of Direct Taxes (CBDT) maintained its sustained efforts to conduct searches, seizures, survey and prosecutions under Direct Taxes Laws during the first half of 1983. Accordingly, 1857, searches were made throughout the country during the said period and the approximate value of the concealed assets seized was Rs. 1025.22 lakhs as against 2087 searches conducted during January—June, 1982 with Rs. 1203.37 lakhs worth value of assets seized therein.

As for number of survey of premises made during the first four months (January—April) of 1983, was 266916 as against 123427 surveys conducted during the corresponding period of 1982. Besides, 40842 notices for filing returns under Income Tax and 625 under Wealth Tax were issued during the period. Number of voluntary returns filed under Income Tax was 54913 and under Wealth Tax 1670 during the said period as against 16910 notices for filing returns served under Income Tax and 516 under Wealth Tax, and 22659 voluntary returns filed under Income Tax and 2415 under Wealth Tax during the corresponding four months of 1982.

During January—June 1983, 690 prosecutions for concealment of income and wealth were launched as against 348 prosecutions during the corresponding period of 1982.

Checking black marketings and hoardings

During the period April—June, 1983 the States and Union Territories continued their sustained efforts to check black marketings and hoardings throughout the country. Accordingly, 19,574 premises of black marketeers and hoarders were raided, 1,160 persons arrested, 518 persons prosecuted, and 102 persons convicted. The total value of goods confiscated during the period amounted to Rs. 74 lakhs.

The number of persons detained under the Prevention of Blackmarketing and Maintenance of Supplies of Essential Commodities Act, 1980, during the quarter ending June, 1983 was 33 in all. ☐

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Remedial Measures

The positive aspect of this situation is that, in recent years, steps have been taken towards provision of quality foods to consumers.

Some of the factors that make consumers quality conscious include increased food production, urbanization, rise in standard of living, technological advancement and awareness of nutritional requirements. For obtaining quality end products, necessary steps have to be taken at several points such as farm, harvest, storage, processing and distribution.

The Indian food standards and the statutory provisions for quality control have been in existence for a long time but their enforcement lies with the State Governments.

Under the Prevention of Food Adulteration Rules, standards for foodgrains meant for human consumption should fulfil the following conditions :

(i) Grains shall be free from deleterious material and insecticide residues in excess of the prescribed permissible limits.

(ii) Foreign matter, which includes sand gravel, dirt stones, pebbles, straw, stems, chaff, cockles, oilseed and other non-poisonous seeds but excludes other foodgrains, shall not exceed 4 per cent by weight.

(iii) Grain that is damaged by fungus, moisture or heating and wherein the damage is not sperficial but grain is affected internally shall not exceed five per cent by weight.

(iv) The uric acid content arising as a result of insect damage shall not exceed 10 mg per 100 grammes sample of grain.

(v) The loss of weight owing to moisture content shall not exceed 6 per cent.

There is a Central Committee for Food Standards (CCFS) functioning under the Ministry of Health and Family Welfare. The Committee advises the Central and State Governments on matters arising out of administration of Prevention of Food Adulteration Act. The Committee has representatives from Central Government, State Government and certain Research Institutes besides Central Government nominees to represent agriculture, commercial, industrial and consumer interests.

The Indian Standards Institution (ISI) is the National Standards Organisation, whose standards are voluntary and not mandatory. Standards are drawn after considering the viewpoints of the producers, processors and consumers.

The Agmark standards are issued by the Directorate of Agriculture Marketing of the Central Ministry of Food and Agriculture. The Agmark specifications are formulated taking into account the physical and chemical characteristics. Grading under the Agriculture Produce (grading and Marketing) Act, 1937, is voluntary for the commodities consumed in the country. It is, however, obligatory for a few commodities meant for export. Grade specification has been notified for over 60 agricultural commodities.

The Fruit Products Order, 1955, under the Essential Commodities Act is another regulatory measure to exercise quality control over fruit and vegetable products. The Central Fruit Products Advisory Committee advises the Central Government on these matters. ☐

Neurosurgery, not dreadful

Dr. P. N. Tandon

Neurosurgery is simply surgery on the nervous system like brain, spinal cord and nerves for the treatment of neurological diseases. The eminent doctor at the All India Institute of Medical Sciences, in this article, says that there is no neurosurgical operation done anywhere in the world, which is not being successfully done in India today. He assures that neurosurgery is safe and not dreadful and should not be delayed when required.

Neurosurgery is a relatively new discipline of medicine. In its modern form it was initiated in India in 1949 by Dr. Jacob Chandy in Vellore, to be followed shortly afterwards bv Dr. Ramamurthi in Madras and Dr. Ginde in Bombay. The last two decades have seen a rapid stride in its development, both quantitatively and qualitatively. There are now more than 200 neurosurgeons in the country, distributed in nearly 50 different departments. There is no neurosurgical operation done anywhere in the world, which is not being successfully done in India today.

Neurosurgery, what it is

What is Neurosurgery? What is its scope? How is it performed? What kind of facilities are requireed for it? What future holds for this discipline.

Neurosurgery is simply speaking surgery on the nervous system, i.e. brain, spinal cord and nerves, for the treatment of neurological diseases. It also includes surgery on the skull and spinal column which protect the brain and the spinal cord respectively.

Neurological disorders requiring surgery afflict human beings from birth to ripe old age. Some common examples of these will be illustrated.

Birth defects

Sixty per cent of all symptomatic birth defects are seen in the nervous system. These occur in 2.4 per 1000 live births. The three common examples are, hydrocephalus i.e. excessive accumulation of fluid in the brain resulting in a large head, spinal defects generally called meningoceles and skull defects resulting in protrusion of the brain as a swelling outside the skull. There is a special type of skull defect which we see more frequently in some parts of India compared to the rest of the world i.e. the variety called Nasal encephalocele—the brain protruding out through a hole in the floor of the skull in the region of the nose.

All these require surgical correction early in life. Unfortunately all are not treatable. It is now possible to diagnose such untreatable lesions during pregnency and appropriate measures can be taken to terminate such a pregnancy.

Injury to the brain

Head injury affects all ages but for more frequently children and young adults, often at the prime of life. On an average 200,000 persons are victim of road accidents each year in our country; 70 per cent of these suffer head injury. While most of these patients can be treated by general surgeons, 10—15 per cent require specialised treatment by the neurosurgeons. Timely surgery for open wounds (compound injuries) and brain clots can save lot of lives and prevent long term invalidity. In the small head-injury unit in the All India Institute of Medical Sciences (A.I.M.S.) doctors treat nearly 600—700 patients every year, amongst whom nearly 150—200 require surgery.

Brain infection

Infections of the nervous system, most of them curable, many of them preventable, account for 10—15 per cent of all neurological and neurosurgical admissions in the hospitals. These also commonly affect children and young adults more frequently. When infection results in the formation of an abscess or a tumour-like mass surgical intervation becomes necessary. Owing to failure in taking preventive measures we see such larger number of these cases than in the Western countries. Defective hygienic practices are responsible for some of these, specially the parasitic diseases like cysticercosis etc.

Prevention

The following few examples will illustrate how brain infections can be prevented :

(a) If we avoid mosquito bite and prevent malaria, cerebral malaria, which is the most dangerous form of the disease can be eliminated. Even otherwise prophylactic use of anti-malarial drugs in endemic areas will reduce the chances of infection.

(b) Use of polio-vaccine prevents poliomyelites.

(c) Avoiding eating any uncooked, unwashed vegetables|salads will prevent cyticercus infestation of the brain.

(d) In cases of open wounds of the skull proper and prompt surgery prevents later infection.

(e) Prompt and radical treatment of discharging ear will prevent 90 per cent cases of brain abscess.

These examples can be multiplied.

Brain tumours

Surgery for brain tumours constitute the largest part of our work. Brain tumours afflict 10 out of every 100,000 population. 50 per cent of these are benign and hence curable. In A.I.I.M.S., this Unit operates upon nearly 300 such cases every year, several times more than any single neurosurgical department in the whole of the North American Continent. Modern diagnostic methods have made it possible to diagnose these early. Likewise advances in anaesthetic techniques, sophistication of surgical facilities like operating microscope instruments, etc. have made such type of surgery far safer than what it was a decade ago. Owing to the advanced stage of the disease when our patients present, the average mortality is still undesirably high in the range of 10—15 per cent. However, for several types of tumours an operative mortality of less than 5 per cent has already been achieved. The results in the Institute are already comparable to many advanced centres and we have no doubts that these can be further improved.

Strokes

Sudden onset of paralysis or less of other neurological functions, due to defect in blood supply (ischaemia) to the brain or rupture of a blood vessel resulting in haemorrhage, till recently was beyond the scope of any active treatment. While it may afflict persons at any age, it is more frequent in the elderly age groups. With the rise in life expectancy, stroke is assuming increasing importance, affecting approximately 200 persons per 1 lakh of population. Alongwith heart disease, it is the commonest cause of death in all advanced countries. All those precautions which Prof. M. L. Bhatia has already explained in respect of Heart Attacks (please see Yojana, Issue dated September 1—15, 1983) are equally applicable to prevent strokes i.e. high blood pressure, diet, diabetes and probably smoking.

Recent advances in diagnosis and surgical technique have made it possible to cure at least some of these patients and help some others. This type of surgery, still in the stage of evaluation, has greatly improved with use of operating microscope. An increasing number of such operations have been performed in our department during the past 5 years.

Functional disorders

Neurosurgical operations are also carried out to relieve such functional disorders like epilepsy, Parkinson's disease, intractable pain etc. It may be pointed out here that there is very little role of neurosurgery in the treatment of patients with mental illness. Such operations, very common in the 40's, and 50's are seldom required now. The tremendous advances in the medical treatment have taken care of such cases.

It may be pointed, at the cost of repetition, that most of what neurosurgery can achieve today has been made possible, not only because of advances in surgical skills, or techniques, but also due to the advances in diagnostic facilities, specially neuroradiology and dedicated efforts of anaesthetists, who not only give safe anaesthesia for long hours but also supervise pre-and post-operative care. Intensive care management, a joint responsibility of the whole team, and not the least, a very high standard nursing care are essential for good results.

There are a large number of other conditions like spinal injury, tumours, discprolapse etc. or nerve injuries and nerve tumours which are treated by Neurosurgeons.

Neurosurgery, in spite of the extreme delicate nature of the nervous tissue, is today successful in a large majority of cases. It is safe and should not be dreaded or delayed when indicated. Though lot more needs to be done to add to its benefits, the advances made in last decade itself are a genuine boon for patients suffering from diseases of the nervous system requiring surgery. □

**(Based on a public lecture at the
All India Institute of Medical Sciences,
New Delhi)**

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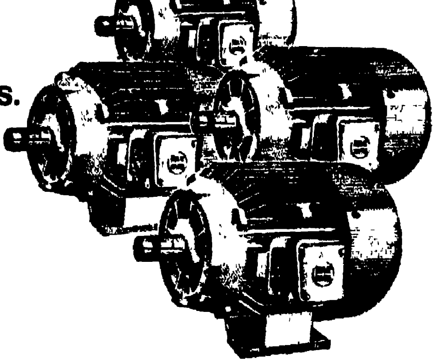

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Science & Technology Notes

Facilities for loss Prevention due to fire at CBRI

THE CONCEPT and practice of loss prevention is very relevant in a developing country like India. Some indices of avoidable losses in India are given below :

Damage due to fires: Rs. 9000 million per year
Number of persons killed due to fires, industrial, road and other avoidable accidents per year. Rs. 30,00.

Apparently, if a part of the above losses are controlled, there is scope to improve the quality of life substantially. With this objective in view, the Fire Research Laboratory at the Central Building Research Institute, Roorkee, has been carrying out research and investigations into the problems of fires in buildings. The laboratory has primarily been designed to accommodate fire research|rating furnaces and standard test facilities for evaluation of performance of materials in fires, as also the development of various types of cheap, reliable and robust fire actuated devices like sprinklers, fire detectors, electrical appliances, extinguishing media, fire retardance etc. Test facilities have also been provided to verify their compliance with performance requirements of national and international standards. A method of fire retardant treatment of thatch employing mud plaster developed at the laboratory deserves special mention because of its potenial in raising rural fire safety. Drypowders for extinguishing fires in metals and hydrocarbons, intensifier for compressing air into breathing apparatus sets used in fire fighting, have been developed at the laboratory. The laboratory is fully equipped to offer consultancy services in the areas of fire detection, prevention, protection and extinguishment. It has undertaken fire investigations of LIC Building in Madras, Cold Storage Fire in New Delhi, Shakti Nagar fire in Lucknow. (CSIR).

Remedy For thirst

Soviet scientists have invented a beverage one glassful of which satisfies thirst for a long time. Named Saqlyk (good health), the new drink is made up of green tea, camel thorn and peppermint.

Camel thorn helps prevent intestinal diseases and peppermint imparts a refreshing taste and fragrance. It also contains water-soluble vitamins, salts and micro-elements which exercise a beneficial effect on the organism.

Tests have shown that Saqlyk improves the body's thermo-regulation and is an excellent tonic. (APN).

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Economic Notes

CENTRAL ASSISTANCE FOR RURAL GODOWNS

The Ministry of Rural Development proposes to provide Central subsidy of Rs. 500 lakhs during the current financial year for creating an additional storage capacity of four lakh tonnes in the rural areas under its scheme for establishing a national grid of rural godowns. The scheme is being implemented since 1979-80. Till March this year, the Government has released Central assistance of Rs. 674 lakhs to various States for constructing 2607 godowns with a total capacity of 12.44 lakhs tonnes.

The scheme is different from the other schemes in as much as it is primarily meant for providing warehousing facilities to the farmers near their fields. The scheme is being implemented through the cooperative societies, market committees and State Warehousing Corporations.

EMPLOYMENT OF WOMEN

To study in depth the employment of women in handloom, powerloom, construction industries and for building up statistics on employment of women, two separate groups have been formed, of five member each. The National Tripartite Committee on Employment of Women set up under the Equal Remuneration Act has suggested such a set up.

PRODUCTION OF 43.5 MILLION TONNES OF WHEAT

Measures are being initiated for further stepping up the production of wheat to 43.5 million tonnes in the ensuing Rabi season, from the record production of 42.5 million tonnes achieved in 1982-83. The State Governments consider a bumper crop of that level achievable in 1983-84 also, in view of the favourable moisture regime for rabi crops this year and availability of fertilisers at cheaper prices.

The States have agreed to take full advantage of the good monsoon this year and mobilised available resources—human, material, technological, and financial—to achieve the national target of 142 million tonnes of foodgrains set for 1983-84 comprising 83 million tonnes in the kharif and 59 million tonnes in the rabi season.

AGRICULTURAL EXPORTS CELL FOR SEVENTH PLAN

An Agricultural Exports Cell will be set up in the Commerce Ministry to give proposals on agricultural exports for the Seventh Plan. This was announced by the Union Commerce Minister, Shri Viswanath Pratap Singh, at the 3rd open house discussion in Madras recently in response to certain suggestions from representatives of the Trade and Industry.

AURANGA RESERVOIR PROJECT APPROVED

The Planning Commission has approved the Auranga Reservoir Project in Bihar at a cost of Rs. 125.40 crores. The Project envisages the construction of an earthen dam across river Auranga, a tributory of river North Koel in the Sone basin, near old Palamau fort in the Betla National Park in Palamau district. One canal on the right bank, takes off from the dam to provide annual irrigation to 55405 hactares and 44.44 MCM (0.036 MAF) of water for domestic and industrial use in the drought prone and tribal areas of district Palamau in the Chhotanagpur region. A channel taking off on the left bank will provide drinking water to the animals in the Betla National Park.

NATIONAL SHIPPING BOARD RECONSTITUTED

The Central Government has reconstituted the National Shipping Board. Shri M. R. Krishna, a former Minister in Defence and later in the Industries and Internal Trade Ministry has been named the Chairman of the 22-member Board which includes six members of Parliament, Secretaries in the Ministries of Shipping and Transport and Commerce, Dy. Chief of the Naval Staff, Director General of Shipping, Chairman Shipping Corporation of India and representatives of shipowners, seamen and other interests connected with shipping.

MADHYA PRADESH SECOND BIGGEST MILK PRODUCING STATE IN COUNTRY

Madhya Pradesh produces an estimated 350 lakh litres of milk and after Anand Dairy (Gujarat) it is the second biggest milk producing state in the country. After fulfilling the local requirements a large quantity of milk is being supplied to the farthest areas in the country. This was revealed by the M. P. Minister for Animal Husbandry and Dairy Development, Dr. Tumanlal, while addressing the State level Advisory Committee in Bhopal recently.

Dr. Tumanlal also said that along with the increased production of milk the income of milk producers, which are mostly cultivators, have also gone up.

SMALL INDUSTRIES SERVICE INSTITUTES

The Government will set up 12 branch Small Industries Service Institutes to provide technical and management consultancy to entrepreneurs to establish small scale industries in the backward areas.

REVISED ESTIMATES FOR NHAVA-SHEVA PORT PROJECT

The Union Government has approved the revised estimates for the Nhava-Sheva Port Project. The Project is now estimated to cost Rs. 506 crore with a foreign exchange component of Rs. 185 crore (based on Mid-1983 price level) against the original cost of Rs. 592 crore including a foreign exchange component of Rs. 195 crore (at 1981 price level).

The revised project report now envisages construction of three container berths, two bulk cargo berths and one service berth with a total wharf length of 1,392 metres. The project is now scheduled to be completed by 1987. About one half of the total capital cost of the Project is proposed to be incurred during the sixth plan period and the remaining expenditure in the first two years of the 7th plan.

Pulses production up by 5.3 percent

THE GOVERNMENT is providing additional inputs for increasing the pulses and oilseeds production during the current kharif season. Outlay from the Central Sector for 1983-84 has been raised to provide five lakh free seed minikits of oilseeds and 4.5 lakh seed minikits for pulses to the farmers in the country against 4.42 lakh and 4.0 lakh kits respectively, distributed last year.

In spite of the drought, the production of pulses during the last financial year went up to 119.5 lakh tonnes, registering a 5.3 per cent increase over the previous year. But drought and floods brought a short fall of 8.5 per cent in oilseeds.

To achieve the target of producing 130 lakh tonnes of pulses and 125 lakh tonnes of oilseeds, the Government is also providing free fertilizers and seeds to 100 marginal farmers in each block of the country. It has also sanctioned Rs. 4 crores to Gujarat under a special Government project for free distribution of groundnut seed to farmers in the flood affected areas of the State.

Reports received by the Planning Commission for the first quarter of the current financial year show that 27,560 acres of acquired surplus land were distributed to the landless against the annual target of 2,84,180 acres. During this period 5,800 acres were declared surplus and 3,800 acres were taken possession of. According to the Planning Commission, this programme under the new 20-Point Programme of the Prime Minister is lagging behind because of litigations resorted to by persons whose lands are acquired by the Government as surplus. □

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Over 92 lakh families [illegible] [illegible]

ABOUT 92 lakh rural families have been benefitted under the Integrated Rural Development Programme so far since 1980-81. With an annual target of 30 lakh families, the total number of beneficiaries envisaged at the end of the Sixth Plan is 1.50 crores. The per-capita investment, including subsidies and credit, has been steadily going up. It rose from Rs. 1,642 in 1980 to 2,699 in 1981-82 and reached Rs. 3,107 in 1982-83. At the same time, constant efforts are being made not only to achieve the physical targets but also to improve the quality of implementation of the programme.

Evaluation studies, carried out in a few States on the impact of the programme on the assisted families, reveal that the Programme is progressing in the right direction and is achieving the objectives. According to the evaluation conducted in Tamil Nadu in eight districts, 40 per cent of the beneficiaries assisted in 1980-81 had crossed the poverty line by August 1982. Similar studies in Gujarat, Rajasthan and Madhya Pradesh also indicated that the programme is going in right direction. The preliminary evaluation by the Programme Evaluation Organisation (PEO) revealed that, in spite of some limitations, most of the beneficiaries expressed satisfaction with the programme and the benefit they gained by way of addition to the family income through the assistance provided under the programme. The PEO has taken up detailed evaluation of the Integrated Rural Development Programme at the national level. Its final report is awaited. The Integrated Rural Development Programme, in operation in all the development blocks in the country from October 2, 1980, is a major poverty alleviation programme included in the Sixth Plan. The primary objective of the programme is to reach the poorest among the poor and provide them substantial assistance for raising them above the poverty line. The target group comprises agricultural and non-agricultural labourers, rural artisans and craftsmen, marginal farmers, small farmers and other families below the poverty line in rural areas. Under the programme, the identified families are assisted for taking up income generating schemes. The schemes are financed through a combination of subsidy provided by the Government and loans advanced by cooperative and commercial banks. The subsidy rates vary between 25 to 50 per cent of the scheme. All income generating schemes in the primary, secondary and tertiary sectors are eligible for assistance under the programme.

An outlay of Rs. 1,500 crores has been approved for the Integrated Rural Development Programme during the Sixth Plan. In addition, Rs. 3,000 crores are expected to be raised as institutional credit, leading to a total investment of the order of Rs. 4,500 crores during the Plan period.

During the current year 1983-84, a sum of Rs. 400.88 crores has been allocated for the Programme, of which Central allocation comes to Rs. 204.48 crores. Cooperative banks disbursed Rs. 7.67 crores and the commercial banks Rs. 29.00 crores during the period. Out of these, a total of Rs. 31 crores have so far been utilised up to the end of June 1983 to benefit 2,45,723 families. ☐

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Can evaluation be more purposeful ?

◆

Silk spins wealth among tribals.

◆

Barthal, the oilseeds village.

◆

The FICCI frolics

As we go ahead with 20-point programme

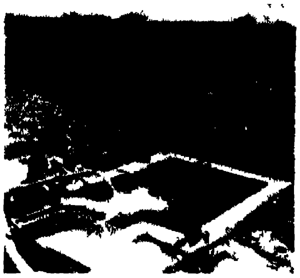
Window on prosperity

THE RURAL electrification scheme not only brightened the villages with light but also provided them a new window on prosperity In more and more villages, electricity is being made use of for running small and cottage industries resulting in more production More and more village and cottage industries are being encouraged to use modern technology For instance potter is using electrical energy to turn the wheel and the *ghani* is run on electrical energy

Against the target of 26,229 villages to be provided with electricity during 1982 83, 6936 villages were provided with electricity till the end of September 1982

18

1



Increasing the irrigation potential

INCREASING irrigation potential, developing and disseminating technologies and inputs for dryland agriculture has been accorded the first priority in the New Economic Programme

Three million hectares of additional land will get water in each of the three remaining years of the Sixth Plan According to the Sixth Plan document this will be the biggest effort in human history in bringing additional land under irrigation each year

As a result of extending electrification scheme to rural parts lakhs of pump sets have been energised and millions of hectares of land has been brought under irrigation It is proposed to energise about 4 23 lakh pump sets during 1982 83 Till the end of September 1983 1 16 lakh pump sets have been energised

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The FICCI frolics

THE FICCI SPONSORED Economic and Research Foundation (ESRF) has recently released a study, Plans and Performance, which at best looks more a pastime devise than a serious exercise to find out the truth. Apparantly, the purpose of the pursuit was not to reach truth, but to ploy statistics to weave the suited design. Before you, dear reader, have the feel of the design as it emerges, imagine one, in the year 1982, seriously doing an exercise just to proclaim that it would take 19 hours to reach Bombay from Delhi by the fastest available train in the country and just 1 hour and 40 minutes by an Indian Airlines flight !

And, this is how Mr S. S. Kanoria, the Foundation Chief, revealed the design at the Press Conference arranged to release the Study

> (i) "If only our plans were implemented as scheduled the situation today would have been entirely different The significant thing would have been that the number of people below the poverty line would have been less than 10 per cent Today, they number about a half."

> (ii) The plans were not implemented in time. A five year plan took 7 to 7½ years to be completed. As such the development expected to be achieved in the last 30 years will take another 16 years to be completed "

What a crude exercise in arithmatic to approach so complex and serious a problem as alleviating poverty in a developing society ! The Study, if you still like to call it so, shows hardly any appreciation of the planning process as such and the complexities underlying the growth process in a vast country ridden with its countless decedant institutions, social as well as economic Its 30 pages, made up of a dozen-and-a-half, to be very precise, tabular statements, carefully selected to suit the design, and some supporting sketchy notes, explain away the plan targets and actual achievements in a very casual manner

The exercise as such does provide scope for some fun, if one is out to have it, but it is sheer naive to pick up 'Plans and Performance' as a field for the fun. If mere fun by some chance, was not the exact purpose of the ESRF Study, may we suggest just two relevant topics which could truly reveal the FICCI concern for speedy growth?

(i) How Black Money Generates and Wrecks Economy?

(ii) Who corrupts Whom to Vitiate Society ?

Believe it or not, dear reader, if FICCI by any chance, had done some exercise on these only two crucial issues and sincerely offered an effective action plan, as they do now in the Study, the plan target would surely not have proved so elusive.

Intriguingly, the six-point action plan in the Study also completely ignores reality of the situation.

Who, in the Planning Commission, or for that matter, in the entire set-up, has ever made secret of the short-falls? They stare at us all the time and, in fact, each plan document laments at them. Why then wittingly, or even unwittingly, make out the case as. ..

> (i) "plans are formulated by Planning Commission without any responsibility for implementation and without any agency for monitoring or evaluation."

Not so, sir. The fact is that there does exist with the Commission, for quite some time now, a Monitoring and Evaluation Division, which regularly reviews progess in key sectors like energy, coal, steel, non-ferrous metals, cement, paper, railways, ports, irrigation, rural development etc etc. Moreso, at present a Planning Commission Member is charged with regular rounds to various projects so as to ensure optimum production with utmost efficiency.

> (ii) "Financial resources should not be spread thinly over a large number of projects. Rather they should be concentrated on few projects for quick implementation."

Sir, every care is taken to concentrate resources on most productive areas so as to maximise output in short period. But our plans have also to take care of regional development to ensure that Plan benefits reach large parts of the country.

While we say all this, believe it, dear reader, we just don't mean that the going is really any good. The deep fissures which black money and corruption has caused in the entire fabric of our society is too serious a phenomenon to be overlooked.

Frankly speaking, active partners in this sordid business on the one hand, are the industrialists themselves, who have yet to grasp the qualitative difference between trading and shopkeeping and a progressive industrial culture, and on the other, a host of corrupt and callous administrators, who stubbornly refuse to see writing on the wall. We do confess lack of courage to stand in defence of the either. What we, however, strongly object to is the gruesome game going on merrily while misery mounts our millions.

—Chief Editor

Evaluation, an integral part of planning process is an essential ingredient of developed administration. But it entirely depends on qualitative and quantitative data collected by specially designed schedules If suitable arrangements for follow up action based on evaluation studies are not there, then evaluation cannot be purposeful

Can evaluation be more purposeful?

C H HANUMANTHA RAO

EVALUATION IS AN integral part of planning process and is an essential ingredient of development administration Its objective is not merely to make general assessment of the progress of any programme The evaluation exercise is essentially directed towards (i) identification of areas of success and failures (ii) appraisal of efficacy of methods adopted, and (iii) possible fresh approaches for restructuring of the programmes to attain the desired objectives

The problems connected with socio economic development programmes are multi-dimensional and hence for a meaningful evaluation an indepth probing and analysis of the factors responsible for successful implementation and evaluation becomes essential

Evaluation is a process through which planners are kept informed of the implementation impact and performance of the identified investment programmes under the Five Year Plans And hence we in the Planning Commision consider evaluation and planning functions as inseparable and indispensable Information about the eventual and actual results of identified programmes are fed back through evaluation studies and reports Evaluation studies of the Programme Evaluation Organisation therefore broadly aim at the (a) assessment of the programme results against the stated targets (b) measurement of the impact on the beneficiaries (c) its impact on the socio-economic structure of the community, (d) assessment of the procedures adopted and adequacy of administrative structure and (e) delivery of service to the targeted groups

Unless there are well thought-out arrangements for follow-up actions based on evaluation studies, purposive role of evaluation cannot be fulfilled.

THIS PURPOSIVE ROLE of evaluation in planning, however, cannot be fulfilled unless there are well thought-out arrangements for follow-up actions based on evaluation studies The two pre-requisites for the proper follow-up relate to timely availability of evaluation reports to the implementing agencies and standardised procedure for action to be taken On both the counts, the existing arrangements in India offer scope for improvement

There is a constant complaint from the implementing agencies that the results of evaluation studies are not made available well within a reasonable time Many studies are long drawn and when their reports are released they cease to be relevant On the other hand very few States I understand have evolved proper follow-up procedure Some of the States have appointed high-level Committees for considering the evaluation reports which hardly meet once or twice a year This impedes the role assigned to evaluation agency

In the Planning Commission we have recently initiated measures to overcome both these impediments The Programme Evaluation Organisation have recently completed many important studies such as Accessibility of the Poor to the Rural Water Supply Evaluation of Food for Work Programme Joint Evaluation Report on Employment Guarantee Scheme of Maharashtra Evaluation of Fishing Harbour Projects, Evaluation Study of Western Ghats Development Programme Study of Oilseeds Development Programmes, Integrated Child Development Services Projects, etc well within the stipulated time limit The observations and recommendations of these reports were made available to the administrative ministries for applying corrective measures in the on-going programmes and or formulation of revised guidelines

There are complaints from the implementing agencies that the results of evaluation studies are not made available well within a reasonable time.

SCIENTIFIC EVALUATION studies entirely depend on qualitative and quantitative data collected objectively by canvassing specially designed schedules and questionnaires at various levels like State District, Block level personnel who are in charge of implementing the programme and finally at beneficiary|household levels Each programme for evaluation study has certain objectives and hence before embarking on collection of data for evaluation studies thought has to be given on what minimum data need to be collected and how it can be efficiently collected to meet those objectives. There is great temptation to collect more data than is required. In this process, some of the essential items on which data need to be collected escape our attention. Evaluation study has to be designed properly keeping in view the objectives of the studies; schedules and questionnaires have to be framed carefully. The data collected by canvassing schedules and questionnaires should be thoroughly scrutinised before it is processed for analysis. It must be understood that it costs money and effort to gather information and that more useful data could have been collected in its place in case the collected data cannot be used.

Evaluation, which forms the very basis of decision-making in planning, is a scientific process. The four fundamental stages of evaluation process relate to (i) preparation of study design (ii) collection of secondary and primary data in the field, (iii) analysis of data and (iv) writing of the report. All the four stages are required to be followed on the scientific basis. This involves skills, systematic and methodological acquisition of which is very essential for producing better quality evaluation reports. Training in evaluation techniques and methods thus become indispensable. Planning Commission realising the importance of training in evaluation had appointed in 1979 a Committee for Training in Evaluation under the Chairmanship of then Secretary, Planning Commission, Shri S S Puri This Committee had observed that training facilities for the evaluation personnel at the state level were lacking in most of the States. The Committee worked out a thought ful design for the training of evaluation personnel at the Senior, Supervisory, and Junior levels.

THE PROGRAMME EVALUATION ORGANISATION have already made an humble beginning in implementing the recommendations of this Committee by conducting 8 senior level training programmes and 4 supervisory level training programmes for training evaluation personnel in methodology and techniques. The responsibility of training of junior level personnel was recommended by the Committee to be that of the State Governments. I am sorry to note that not much progress has been made in this direction by the State Governments.

I would, however, like to congratulate the Government of Assam for organising the first training programme on Methodology and Techniques of Evaluation for Junior level personnel of North-Eastern States and Union Territories during April-May, 1982. This course included various conceptual aspects of evaluation, role of evaluation in planning process, preparation of evaluation design, statistical techniques etc I wish some of the other State Governments take a lead from this and prepare similar training programmes for junior level personnel for their respective regions.

I hope with your introduction to this Workship training, you will not only take necessary steps to bring to the notice of your State Governments to do the needful in this direction, but also avail of training programmes sponsored by the PEO for supervisory level personnel in future.

There is great temptation to collect more data than is required. In this process, some of the essential items on which data need to be collected escape attention.

AS YOU ALL KNOW the Planning Commission in 1979 had set up a Committee for Review and Strengthening of the Central and State evaluation organisations. This Committee reviewed in detail the functions and activities of the Programme Evaluation Organisation both at the Centre and the State Evaluation Organisation. In his report submitted in 1980, it has made several recommendations relating to independence of PEO, scope and coverage of evaluation studies, methods of evaluation, training facilities, follow-up action, coordination between evaluating agencies strengthening of PEO, etc.

This Committee had also examined in detail the existing evaluation machinaries at state level and had made specific recommendations for their strengthening, role and other aspects. The Committee had specifically recommended that with the increasing emphasis in recent years on schemes of experimental nature requiring quick feedback on their performance, evaluation machinery in the States should be geared so as to enable them to share the responsibility of quick and concurrent evaluation with the PEO. The recommendations relating to State Evaluation Organisations were sent to State Governments and you will be glad to know that majority of the State Governments have agreed in principule, to implement them by strengthening their evaluation set-up.

The responsibility of training of junior level personnel was that of the State Governments. But not much progress has been made in this direction by them.

I understand that in the present training programmes, you had very interesting discussions on the various study designs and evaluation reports presented by the participants. It gives me pleasure to note that at long last training in evaluation has taken off the ground and is progressing in the right direction.

Valedictory address to the participants of the Regional Workshop at Pune in Evaluation Methodology and Techniques for the Senior Level Evaluation Personnel, September 14-22, 1982.

More than 12.7 million tribals live in the tropical tassar belt. Under the tribal sub-plans efforts are being made to popularise and develop sericulture in tribal areas. But problems are many—backwardness of areas and of people, absence of processing units, marketing bottlenecks and so on. But if the sericulture, which has vast scope for development, is successfully introduced among tribals, many of the problems of tribal uplift like jhooming, would be solved. Here is an analysis of the prospects and problems in making the tribals take to sericulture.

Silk spins wealth among tribals

ODEYAR D. HEGGADE

SERICULTURE is one of the labour intensive and export oriented cottage industries. In our country the bulk of mulberry production and silk products output is carried out by Karnataka State Appropriate temperate climate and physiogeographical conditions exist in tribal areas of our country also to undertake sericulture on most profitable basis. Some efforts have been made under tribal subplans for the development of sericulture in tribal areas.

The purpose of this paper is to evaluate the programmes for sericulture development and also to analyse its problems and prospects in our tribal belts.

Sericulture as a form of cottage and agro-based industry has two very important facets. They are (1) Cultivation of mulberry, tassar, Muga and eri types of leaves to feed the silk worms and (2) setting up of weaving and silk goods making industrial units. The sericulture industry has been divided into mulberry and non-mulberry in the country. The mulberry silk industry is concentrated in some states like Karnataka, West Bengal, Jammu and Kashmir, Tamil Nadu, Madhya Pradesh and Uttar Pradesh, while the non-mulberry silk industry is gradually flourishing in states like Bihar, Madhya Pradesh, Orissa, Maharashtra, Andhra Pradesh, West Bengal, and in North-Eastern Hilly regions.

The temperate and tropical conditions of tribal areas of our country are highly conducive to the development of sericulture, particularly the tassar culture. Thus, with the implementation of sub-plans for tribal development since the fifth five year plan, special programmes have been implemented to develop sericulture industry in the tribal regions. The fundamental objectives of such special programmes of sericulture development in tribal areas are; (1) to provide regular work opportunities for tribals in terms of definite land based activities; (2) to promote the growth of cottage and small scale industries in manufacturing and processing of silk and cocoons; (3) to increase the income of the tribals and thereby improve their quality of life

THE SALIENT FEATURES of sericulture development programmes being implemented in the recent past may be stated as follows:

(1) Supply of disease free silk worm seed either free-of-cost or at nominal prices for tribal farmers:

(2) Increasing the productivity of mulberry, tassar, moga and eri leaves cultivation:

(3) Promotion of marketing of cocoons reared by tribal farmers through cooperatives:

(4) Establishment of weaving and spinning units in the tribal regions to promote the industrial development of concerned areas.

(5) Protection of tribal farmers who practice sericulture from the exploitation of middlemen by creating appropriate marketing organizations:

(6) Providing subsidy and bank loans to promote sericulture development as a major agro-based industrial activity in the tribal areas.

(7) Involvement of major institutions like the Central Silk Board, the medium and large-sized silk mills, banks and cooperatives etc. to promote the sericulture as an important form of occupation for tribals who live in tassar belts.

The temperate and tropical conditions of tribal areas of our country are highly conducive to the development of sericulture, particularly the tassar culture. So from the fifth five year Plan, tribal sub-plans are being implemented to develop sericulture industry in the tribal regions.

An financial outlay of Rs. 213.668 lakhs was made for implementing 74 schemes in different states and union territories during 1978-79. During this year an actual expenditure of Rs. 173.457 lakhs was incurred on these 74 individual projects. The total number of beneficiaries under these schemes were 62,088 persons, of which 35,954 belonged to the tribal group. All these schemes are basically programmes for increasing tassar cocoons and avoid tassar waste.

The Central Silk Board (1972) has been instrumental in implementing certain schemes of raw material banks in Bihar and other parts of north-eastern tribal areas and it has also opened pilot extension-cum-training centres to promote sericulture and train the tribal farmers in Bihar, Madhya Pradesh and Orissa. Throughout the North and North-Eastern Tribal belts several Tassar seed supply centres have been established to supply tassar seeds either at nominal price or free-of-cost.

Under the sericulture development programme the tribals are given healthy silk worm seeds and provided with marketing facilities by avoiding middlemen. Weaving and spinning units are established in tribal areas. Subsidy and bank loans are sanctioned.

The sericulture industry is still in its very infancy stage in the tribal areas. It has been observed that according to an estimate, "more than 12.7 million tribals are living right in the tropical tassar belt. About 1.04 lakh tribal families are presently engaged in tassar rearing. Similarly out of 11 million hectares of tassar food plants hardly 0.55 million or 5 per cent are reported to have been put into use." This amply reveals the nature of underdevelopment of sericulture and vast magnitude of tassar food plants in the tribal regions.

SEVERAL FACTORS ARE responsible for highly undeveloped nature of sericulture industry in tribal areas. These factors are acting as impediments in the way of developing sericulture as a viable form of cottage industry for the welfare of tribals. The impediments encountered often in developing sericulture in tribal areas may be stated as under·

(1) Sericulture as a form of agro-based cottage industry was introduced very recently in tribal areas. The response of highly backward, illiterate tribals to the programmes of sericulture development has been very poor. The tribals by and large have not understood the potential of sericulture in resolving their unemployment and under employment.

(2) Due to the absence of processing units rearing of cocoons has not been a highly profitable occupation.

(3) Various kinds of production and marketing bottlenecks prevailing often do not induce the tribal farmers to take up sericulture on large scale.

(4) The response of plains tribes to take up sericulture on large scale is very encouraging whereas the response from tribes living in the interiors is very poor. This was due to their pre-agricultural technology attitude towards work and also due to the inadequate coverage of sericulture schemes in such areas.

(5) In majority of the tribal settlements, where the schemes of sericulture are in various stages of implementation, the basic infrastructure facilities like seed grainages, ware-housing, transportation etc. are almost non existent.
Thus tribal farmers are not very much induced towards taking up sericulture as a form of occuptation.

THE POTENTIALITY of sericulture in uplifting the tribals from abject poverty and regular under-employment is really very vast. Moreover in terms of ecological conditions it is possible to develop tassar culture on large scale in our tribal areas. Thus, there is a need for preparing and implementing 'action plans' for sericulture development, with a view to divert tribals from the practice of shifting cultivation and diversify as well as modernize their tradition-ridden production pursuits. Any such 'Action plans' shall be based upon rational measures.

The suggestions made by the study team on Industries and Alliet Sectors in tribal areas constituted by the Working Group on Tribal Development (1978—83) are worth considering as the basic for preparation and implementation of 'Action Plans'. They may be enumerated as follows:

(1) Identification of the forests having food plants for the tassar silk worm.

(2) Maintenance of existing tassar, food plantation by proper pollarding, weeding and soil loosening.

(3) Recognising the rights of the tribals and other weaker section to use the food plants in the forests for rearing of the tassar worm.

(4) Giving rights on clearly demarcated patches of forests to identified families.

(5) Identifying forests suitable for plantation of food plants for the tassar work and taking up an extensive programme of plantation with the help of the families, who will have rights to rear tassar worms in the trees standing on the specified parcel of land.

(6) Raising of economic plantations of tassar food plants under the afforestation programmes of the forest department in the tassar growing areas.

One of 12.7 million tribals living in tassar belt, about 1.04 lakh tribal families only are presently engaged in tassar rearing. Similarly out of 11 million hectares of tassar food plants hardly 0.55 million or 5 per cent are put to use.

(7) Establishing suitable number of seeds and extension farms to supply seed worms to the rearers which will include strengthening of the seed organization through a network of pilot project centres for increasing the availability of quality seed.

(8) Extensive education of the tribals on the economics of the plantation techniques and improved rearing practices advocated by the Central Tassar Research Station, Ranchi.

(9) Arrangements for supply of worms to the rearers.

(10) Arrangements for purchasing the tassar cocoons at remunerative prices.

Several problems, like backwardness and illiteracy of tribals, absence of processing and marketing facility lack of infrastructural facilities, are responsible for highly underdeveloped nature of sericulture Industry in tribals areas.

(11) Establishment of spinning and weaving centres, duly supported by a design section and marketing arrangement.

(12) Providing training for weaving and yarn-spinning

(13) Provision of additional marketing facilities in all the production centres backed by adequate financing from commercial banks at low rate of interest and on personal sureties.

(14) Arrangement for marketing of the tassar cloth in order to plough back maximum profits to the growers and weavers.

(15) Organization of cooperatives of tassar rearers and tassar weavers to serve as service centres in selected areas with provision for banking facilities.

(16) Expansion of the training programmes at various levels to meet the demand of trained technical personnel for manning the developmental schemes in the states vis-a-vis training of farmers in extension of education.

Alongwith the above measures, efforts should also be made to involve the agencies like Central Silk Board, the Village and Khadi Industries Board, Small Scale Industries and cooperation departments of the respective state/union territories governments to prepare and implement an integrated joint action programme for sericulture development. Appropriate number of Khadi and Gramodyog Samities shall be formed to promote the objectives of action plans for sericulture development, as it was done in case of Cachar District of Assam. Steps should also be taken to appoint the local educated and trained youths as field workers to promote sericulture programmes and induce the tribal farmers to seek training in tassar leaves growing tassar worms rearing, setting up of silk yarn weaving units individually as well as collectively in terms of cooperatives. The success of programmes for tribal development depend upon the amount of confidence which the officials in charge of development schemes are able to create in the minds of poor and highly exploited tribals. So, the tribal educated and trained youths shall be absorbed more and more to effectuate the programmes of sericulture development.

There has been phenomenal scope for the development of sericulture industry in our tribal areas. Sericulture has vast potentialities for generating employment opportunities and opening new outlets of income generation for tribal development and welfare. Planned efforts to develop sericulture industry in tribal areas will go a long way in diversifying their subsistence economy by opening up of new vistas of industrial entrepreneurship on small scale. This would also help us to effectively, tackle the problem of 'shifting cultivation' tribal belts. Therefore integrated schemes for sericulture development should be accorded top priority in preparing and implementing Tribal Sub-plans. Such a step would definitely ensure better rewards for the poverty-stricken tribals making planned development process more socially purposeful and lucrative for them □

Floating Fish Farm

A complete floating fish farm which can produce 150 tons of fish per annum with a staff of only two has been developed by EWOS AB, a Swedish subsidiary of the Alfa-Laval Group specializing in products and systems for animal nutrition and plant protection. Called the Giant Cage, it is an all-weather installation with alternative anchoring methods and a robust steel construction.

The Fish farm can be easily moved from one place to another. enabling users to utilize optimal water conditions and achieve savings on transportation costs. It includes a feedstuff storage area, slaughter room, engine room, cold store and mess. Tested under severe conditions in the Finnish archipelago last winter, the farm yielded excellent results.

The Giant Cage is independent of land links, having its own power unit. Rational solutions to the various tasks involved and far-reaching mechanization mean high capacity per employee. As a result, the fish are continuously sorted in a rational manner, which is decisive for the farm's efficiency.

According to EWOS the installation provides a viable alternative to small, land-based fish farms, being a flexible plant for large-scale production giving a greater return on investment.

Agricultural extension system in India has been limited to popularising new techniques of cultivation. The scope of extension service should be widened so as to popularise technical aspect as well as to bring about social transformation. This is imperative to achieve the objective of social transformation laid down in the First Five Year Plan. The author discusses various aspects of agricultural development and agricultural extension and highlights the need to give a reorientation to the latter.

Need to reorient extension service

DAYA KRISHNA

AN ALL-INDIA Workshop on Agricultural Information Communication was held at Srinagar between 10th and 15th August 1982. The Workshop had been organised by the Extension Directorate of the Central Ministry of Agriculture in collaboration with the J.K. University of Agricultural Science and Technology and the State Department of Agriculture. Participants of the Workshop included agricultural experts, scientists, mass-media-specialists and representatives of the State governments and agricultural universities. The Workshop had arranged discussions in regard to eight different aspects of communication in agriculture. Dr. S P. Gupta, Adviser Perspective Planning in the Planning Commission delivered the key-note address.

The communication system in agriculture which had assumed great importance after launching of the high-yielding varieties programme in 1966, because of the necessity of large-scale dissemination of knowledge in regard to the use of new technologies, is expected to continue playing a very important role in future. The irrigation potential of the country is expected to be doubled during the next 20 years. This will means changes in the cropping pattern of different areas of the country which will need a sustained effort for training the farmers in the new technologies. In addition to raising the irrigation potential of the country cropping intensity will laso be raised for maintaining the rate of growth in agriculture. This will require a huge scientific effort for evolving suitable varieties and technologies, and a strong and efficient communication system for their widespread and early propagation.

The irrigation potential of the country is expected to be doubled during the next 20 years. This means changes in the cropping pattern of different areas of the country which will need a sustained effort for training the farmers in the new technology.

Whereas science helps us in understanding the forces of nature, technology is an instrument for bringing about the desired change in the existing order of things. Technological change takes place in the parameters of production functions, resulting directly from the new knowledge. In agriculture, technological change means a shift in the production functions involving adoption of those farming techniques which are developed through research for bringing about diversification and augmentation of production with a view to raising incomes of the farmers. Use of improved seeds, fertilizers, pesticides, improved implements, extension of irrigation and contour-bunding etc. constitute certain important technological changes.

In India a big technological change was initiated with the introduction of the high-yielding varieties from the kharif season of 1966. On account of the large-scale cultivation of the HYVs a great technological change has taken place in Indian Agriculture during the last 16 years.

Between 1966-67 and 1981-82 gross irrigated area has risen from 31.7 million hectares to 57.22 million hectares; the area under HYV crops has risen from 1.9 million hectares to 46.7 million hectares; the consumption of chemical fertilizers has risen from 1.1 million tonnes to 6.13 million tonnes; and the production of foodgrains has risen from 74 million tonnes to 134 million tonnes.

But benefits of the increases in the foodgrains production have been received mainly by the farmers having irrigational facilities because the technologies developed so far are applicable in the irrigated areas only. Out of the 143 million hectares of sown area in the country only 43 million hectares have irrigational facilities and the farmers in these areas are deriving good benefits from the new technologies. For example, during 1981-82, about 15 million tonnes of foodgrains were procured in the country, out of which about 11 million tonnes valued at about Rs. 1500 crores were procured from the two states of Punjab and Haryana which account for only 5.4 per cent of the net sown area in the country. This is due to the fact that irrigation facilities are available in 80 per cent of land in Punjab and 55 per cent of land in Haryana. A majority of farmers in these two states, however, have not benefited from the procurement of foodgrains because they do not have sizeable marketable surpluses on account of the small size of their holdings.

Application of science and technology has certainly brought about a big change in India agriculture; but the benefits of this change have accrued largely to the large farmers in the irrigated areas of the country. This change has, thus, been a "change in favour of the rich". In addition to the benefits accruing from the large size of the farm the owners of large holdings have the additional benefit of easy access to inputs and knowledge. Technology is, no doubt, neutral to size; but, the access to inputs and knowledge is not neutral to size.

A very broad objective was assigned to extension in the First Plan, which said, "Community Development is the method and Rural Extension the agency through which the Five Year Plan seeks to initiate a process of transformation of the social and economic life of the villages". But the extension effort in India has remained almost with the technical aspect of farm production.

What is true of Punjab and Haryana is also true of the whole country. Because of the very skewed nature of land distribution, a very small proportion of farmers own a very large proportion of land and account for most of the marketable surpluses. In 1976-77, farmers owning large holdings of 10 hectares and above, which formed only 3 per cent of the total number of holdings in the country owned 26.1 per cent of land. On the other hand, farmers having small holdings of less than 2 hectares size, which constituted 72.6 per cent of the total number of holdings owned only 23.7 per cent of land.

The excessive and growing pressure of population has been resulting in the breaking up of the small farms into tiny pieces of land scattered here and there. In Uttar Pradesh, for example, the number of holdings of less than 0.5 hectare size had risen from 7.3 million in 1970-71 to 8.4 million in 1976-77 and their proportion to the total number of holdings had risen from 47 per cent to 50 per cent during this period. In 1982, the number of such tiny holdings in Uttar Pradesh is estimated to have risen to 9.5 millions, forming about 54 per cent of the total number of holdings. In other words, now a majority of farming households in Uttar Pradesh have less than 0.5 hectares of land. The number of farmers having such small holdings is already very large in most of the States and is growing steadily. It is important to note in this connection that a holding of about 2.0 hectare size is considered necessary to support a family.

On account of the continuously diminishing size of the land-holdings millions of farmer are joining the ranks of agricultural labourers every year on account of unemployment, poverty and indebtedness. Most of the agricultural labourers do not own even a small piece of land. In several states, the households of landless agricultural workers now outnumber the households of farmers. For example, in Kerala, the households of landless agricultural labourers are more than double the number of farmers' households. And, the average size of holdings in Kerala at 0.49 hectare is the smallest in India. This is a serious situation. And this situation is developing fast in several states of the country.

Under these circumstances, the most pressing need of Indian agriculture is the evolving of short-duration varieties and technologies which can substantially raise the cropping intensity with a view to increasing the volume of production, and, consequently, the employment opportunities and incomes among the poorer sections of the rural population.

Out of the 100 million hectares of rainfed land in the country about 48 million hectares fall in the low rainfall regions and are know as drought-prone areas. These drought- prone areas, though constituting nearly 1|3 of the cropped area, account for only1|5 of the total foodgrains production. About 2|3rds of country's land under jowar and about 1|2 of the land under bajra, arhar and ragi lies in these areas. Nearly 84 per cent of area under cotton is rainfed, the annual rainfall being as low as 250 m.m in about half of this area. About 90 per cent of groundnut crop is raised in unirrigated areas and, therefore, production of groundnut fluctuates with the weather. Most of the other important oilseeds like sesamum, rape and mustard, linseed and castor, as also pulses, are predominantly cultivated in dry areas. Evolution of suitable high-yielding varieties of crops which can give higher yields even under conditions of moisture-stress and little fertilisers can bring about considerable increases in agricultural production in these areas and an improvement in the standard of living of the farmers.

Farmers in the hill areas have remained extremely backward and poor in spite of the generous bounties of nature. About 90 per cent of the population in the hill areas depends upon a subsistence form of agriculture and forestry. A very small proportion of the area is irrigated in spite of the very large number of springs and rivulets which have not been harnessed yet. Considerable soil erosion takes place due to the varying elevations of holdings. Agriculture which is the mainstay for the bulk of population is carried out in a primitive manner in small holdings on the hill slopes and yields are very poor.

Our extension workers have indeed done a commendable job in popularising new technologies for raising the crop yields. It is difficult to motivate the farmers to adopt new technologies which involve putting in more efforts and resources than what they have been used to. Extension workers had to strive hard for persuading the farmers to adopt the technologies.

In order to make technology an instrument of "change in favour of the poor" its scope will have to be extended so as to cover small farms, dry areas, hill areas and crops other than cereals viz. pulses, oilseeds, cotton, jute, vegetables and horticulture crops. Appropriate technologies have to be developed for realising optimum cropping intensity in accordance with the local agro-climatic conditions. The technology should, thus, be an instrument for realising a balanced growth of agriculture so that the poorer sections of the rural population are also able to partake of the benefits of the agricultural growth. The first five points in the new 20-point programme constitute an attempt to realise this balanced pattern of growth in Agriculture.

To bring about social transformation the extension worker should not only bring in new technologies and the inputs to the farmers, but also should help the weaker sections of the rural community in receiving social and economic justice. He should educate them about their rights and facilities granted in different laws.

TECHNOLOGY CANNOT be used effectively as an instrument of "change in favour of the poor" without properly re-organising and re-orienting the extension organisations which are responsible for training the farmer in the use of the new technologies. Rural development requires education and technical assistance for the rural people, both as a means of development and as a goal of the process. Development texts and plans usually underscore the importance of agricultural education, training and extension programmes. All International agencies insist upon the need for training. F.A.Os Human Resources and Institution Division has training and extension as one of its main functions Agricultural projects financed by the World Bank and other International agencies usually carry a training component With so much emphasis on training it is surprising that there have been very few serious discussions about how training programmes should be organised, what methodologies should be followed and what their contents should be.

According to the various U.N declarations and conventional wisdom, rural development means more than just the growth of agricultural production. It also implies a more equal distribution of incomes and greater participation of rural people in economic and political decisions as also a closer association with the national society. Relatively unproductive agricultural technologies must be replaced by more efficient ones based on latest results of research. Irrigation and transport systems must be strengthened and enlarged. Agro-industrial complexes should be created for the efficient processing and marketing of agricultural products. Small farmers and landless agricultural labourers who have been living at subsistence level must be made more productive and pushed above the poverty line.

IN INDIA, COMPREHENSIVE extension service was established in 1952 and is, thus, 30 years old now. A very broad objective had been assigned to extension in the First Plan, which, *inter alia* said "Community Development is the method and Rural Extension the agency through which the Five Year Plan seeks to initiate a process of transformation of the social and economic life of the villages". In spite of this broad objective, the extension effort in India has remained associated almost entirely with the technical aspect of farm production and home-making.

This narrow notion about the role of extension is attributable mainly to the background against which agricultural extention came to be organised in India and has been functioning ever since. Because of the prevailing situation of increasing food deficits, there was a widespread concern about the need for achieving large increases in the agricultural production from the very beginning of the extension effort. The Second Plan required the National Extension and Community Development Projects to play an important role in promoting the diversification of the agricultural economy and in increasing agricultural production. The Third Plan reiterated the need to orient the extension agencies towards realisation of the specific targets of agricultural production. Extension functionaries had also to play important role in the implementation of the Intensive Agricultural District Programme (IADP); Intensive Agricultural Area Programme (IAAP), High-Yielding Varieties Programme (HYVP) and the special programmes for the small farmers (SFDA) and marginal farmers and agricultural labourers (MFAL). The extension agencies, thus, became more and more involved with the activities relating to crop-production, dairying, poultry, credit, irrigation and optimum use of land etc.

The influence of U.S.A. has been another contributing factor in this regard The U.S.A. possesses a vigorous and widespread agricultural extension organisation and has also been the largest supplier of technical assistance to India in the field of agriculture. But, unfortunately, there is a vast difference between conditions in U.S.A. and those obtaining in India. In U.S.A., the extension worker is expected to have an approach almost similar to that of an anthropologist. He takes society as it is, and it is none of his functions to strive to bring about any changes in the socio-economic order. The exclusive pre-occupation of the extension worker in U.S.A. has been, therefore, with giving assistance to the farmers for increasing their farm production and profits. It is, thus partly due to the influence of U.S.A. that the extension functionaries in India have developed a sort of mental predilection for a stance of neutrality vis-a-vis the existing socio-economic system and are occupied more or less exclusively with matters relating to agricultural operations.

In regard to the popularisation of new technologies for raising the crop yields our extension workers have indeed done a commendable job. Extension is an extremely tough job. The deficiencies or shortfalls in the supply of tangible inputs like seeds, fertilisers, water, pesticides etc. become known rather immediately, and it is possible to initiate suitable remedial measures; but deficiencies of knowledge are difficult to know precisely, and, therefore, their removal needs time and efforts. And it is even more difficult to motivate the farmers for adopting new technologies which involve putting in more efforts and resources than what they have been used to for the past several generations. Extension workers had to strive hard for persuading the farmers to adopt new technologies. It is mainly their spirit of adventure and hard work which had paved the way for the spread of new technologies in its early stages of their introduction But technology is only a means for raising the production and cannot be used for changing the socio-economic structure with a view to ensuring a steadily growing participation of the poorer sections in the economic activities and facilitating an uninhibited flow of the gains of economic progress to all sections of the rural population.

There is a rather compelling reason for enlarging the scope of the work relating to agricultural extension. Actually, the new emphasis on the development of agriculture and the uplift of the rural poor is only a fresh pointer to the broad objective of social transformation laid down in the First Five Year Plan. It means a greater responsibility for the extension worker, who besides bringing new techniques and the needed inputs to the farmers, should also help the weaker sections of the rural community in receiving social and economic justice. He should inform and educate people about the rights and facilities granted to them through different laws enacted from time to time. He must play an important part in the implementation of the programmes for the amelioration of the conditions of the rural poor viz, the implementation of land ceiling; redistribution of surplus land; emancipation and rehabilitation of the bonded labour. liquidation of rural indebtedness; ensuring minimum wages to agricultural labour; improving facilities for supply of drinking water in the villages; providing housing sites in rural area; and ensuring better irrigation facilities, as also their optimum use. It is important to note that Extension is only one element of development and it cannot be effective unless efforts are made simultaneously for providing to the farmer access to land, education, health-services, credit, means of transportation and market.

IT IS INTERESTING to follow the course of gradual evolution of the extension methodology in India. In the early years of the HYV programme, the emphasis was on personal approach and the Village Level Worker (VLW) was required to work through the opinion leaders and influential farmers. Afterwards, the emphasis shifted towards the "wide participation" technique which included field demonstrations, charcha-mandals and group meetings. But, in spite of the emphasis on "wide participation" a preponderant proportion of the weaker sections of rural population remained outside the reach of extension functionaries, Subsequently, organised endeavours were made in different parts of the country which achieved a total coverage of the farming population. These endeavours, which were successful in raising the productivity and involved all farmers, left outside their scope the large number of agricultural labourers. The Block Demonstration Method in Karnataka was an example of this total coverage method. It involved the entire community of farmers and was a planned, deliberate effort to reach the entire group of farmers cultivating a particular crop in a contiguous area. The focus was fixed on the major crop of the area irrespective of the socio-economic and educational background of the farmers, and efforts were made to involve all farmers to adopt the package of recommended practices through a planned, on-the-spot, technical guidance.

The reorganised extension system or the 'Training and Visit' (T&V) system of extension also covers all farmers irrespective of their size of the farms, or the state of irrigation. An extremely important feature of the T&V system is the involved efficient element of management which ensures contact with all farmers through visits of the extension workers on certain pre-determined regular intervels. As a matter of fact, this total coverage approach constitutes a logical culmination of the gradual unfolding of the process of extension over the last 30 years of its operation in India.

The T&V system of extension is being implemented in 12 states of the country and projects in regard to states of U.P., Punjab, Himachal Pradesh and Jammu & Kashmir are under preparation. It is hoped that this major effort directed at re-organisation of agricultural extension will, in due course, cover all the major states in the country, thus, providing a mechanism for effective transfer of know-how available at the research stations to farmers' fields, through a well-defined time-bound system.

The T&V programme has conclusively proved that technology is also an important input for increasing agricultural production. Dissemination of proper technology has brought about substantial increases in production without any appreciable increase in the inputs. This is indeed an achievement of the T&V system. But, the entire T&V system is geared to cater to the technical needs of the farmers and is not organised on the basis of the broader perspective and goal of the extension work envisaged in the First Five Year Plan viz. transformation of the social and economic life of the villages.

In short, the two major constraints for rural development are that our technologies are suitable for irrigated areas only and our Communication System is involved entirely with the technical aspect of crop production. A lot of research work is, therefore, needed for evolving varieties suitable for the dry areas and hill areas. Also, the extension agencies will have to be re-oriented and reorganised in view of the larger objective of "social transformation", in addition to attending to the work relating to the propagation of new technologies.

A big hand for small farmers of Nizamabad

J. JANARDHAN &
MOHD. ABDUL QUDDUS

The small farmers of Nizamabad, a backward district of A.P. have been steadily progressing with the helping hand extended by the SFDA. The task is gigantic through the resources are meagre, but the effort goes on. Here is an account of the performance of the Agency in the district.

NIZAMABAD is one of the districts of Telangana which is socially and economically backward region in Andhra Pradesh. The cropping area in the village is 3,12,813 hectares There are 863 inhabited villages in the district. According to 1981 census, rural population of the district is 13.56 lakhs. The marginal and small farmers in the district form 73.5 per cent of total number of farmers.

The objective of the present paper are :—

(i) to study the assistance provided by the S.F.D.A.|M.F.A.L. project in Nizamabad District and

(ii) to assess the benefits and developments attained by the small and marginal farmers and agricultural labourers under the various programmes in the District.

The Small Farmers Developmency Agency (S.F.D.A.) started functioning from 1st April, 1976 with a total outlay of 1.5 crores The agency had covered 6 blocks, namely Kamareddy, Domakonda, Madnoor, Banswada, Yellareddy and Bheemgal covering 561 villages

SFDA, Nizamabad received Rs. 78.84 lakhs from the Central Government from inception till March 1979. About 8,752 farmers were benefited and the Agency spent Rs. 64.23 lakhs in various schemes.

It was proposed to extend the benefits to 50,000 small and marginal farmers and agricultural labourers during the year 19767-77 to 1978-79 amounting to Rs 1.5 crores, including risk cover fund of Rs. 5.46 lakhs Since the inception of the project, a total amount of Rs 78.84 lakhs was released by the Central Government as grant-in-aid to the agency during the Vth Five Year Plan upto March, 1979. The amount spent by the agency stood at Rs. 64.23 lakhs, that is about 80 per cent of the total grant released. The number of beneficiaries was 8,752 as against the target of 50,000.

IT UPTO March, 1979, the representation of Scheduled Castes and Scheduled Tribes together stood at 36 per cent which is more than 20 per cent of planned target. It is really a commendable achievement of the agency. However, it has not covered proposed beneficiaries under the programmes. It is disquietening to note that during the subsequent years of 1979-80, 1980-81 the achievements of the agency are not upto mark. It is due to non-release of grants from Central Government, that the agency could not achieve its targets

The Agency has incurred an amount of Rs 250.26 lakhs towards the release of subsidy component the financial institutions, including administrative charges upto end of March, 1982.

1-4-1976 to 31-3-1980	120 00 lakhs
1-4-1980 to 31-8-1981	55 04 lakhs
1-4-1981 to 31-3-1982	75 22 lakhs
Total	250 26 lakhs

Table-I on next page brings out that the agency has spent adequate amount for demonstration of plots, improved implements, plough bullocks and carts under improvement of agriculture programme, for sinking of new wells, digging of community wells, supply of pump sets under minor irrigation scheme to small and marginal farmers and sheep rearing units to agricultural labourers.

There are 24 commercial banks, 7 C.C Banks and C.A.D Banks functioning in the selected blocks of the district The S.F.D.A.|M.F.A.L. agency has merged with District Rural Development Agency from October, 1979 extending the scheme to the entire districts.

SFDA, Nizamabad has identified 72,795 small & marginal farmers and agricultural labourers but so far has extended help to only 24,774

The Agency has identified 72,795 small marginal farmers and agricultural labourers and it has so far extended benefits to 24,774.

TABLE II

IMPLEMENTATION OF VARIOUS PROGRAMMES

Programmes		1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
I *Agriculture*—							
Demonstration of plots	Nos	566	637	625	482	--	101
Introduction of HYV and New Cropping pattern	Acres	—	57	—	—	—	—
Improved implements and P.P equipments	Nos	8	205	24	–	-	55
Plough Bullocks and carts	Nos	1150	1100	636	149	259	803
Land Developments	Acres	—	8	3	–	8	77
II. *Minor Irrigations* --							
Lift irrigation	—	—	–	50	–	—	65
Sinking of new wells	Nos	166	150	180	293	133	604
Supply of pump sets, oil engines	Nos.	109	155	255	303	194	434
Digging of community wells	Nos	—	474	341	38	35	291
Renovation of old wells	Nos	—	—	28	27	32	303
Other Minor Irrigation schemes	Nos	—	—	-	4	20	--
III. *Subsidiary Occupations*—							
(a) *Animal Husbandry*.—							
Supply of Milch Animals	Nos	361	260	842	343	108	733
Sheep rearing Units	Nos	85	96	125	149	61	1092
(b) *Fisheries*							
Supply of Nylon nets	Nos.	—	32	24	329	38	115

Source Administrative quarterly reports S.F D A Nizamabad

It is necessary that full grants are released in time to enable the Agency to implement the planned targets according to their programmes.

Small and Marginal farmers are identified only on the basis of land holdings As the land records are not brought upto-date, the deserving farmers are facing much difficulties to get themselves identified as small or marginal farmers, the revenue department should take necessary steps to make the records upto-date and issue the land holding tenant holding pass books to the farmers.

Getting the assistance from the agency involves a cumbersome procedure. The application for subsidy has to pass through the village officer, village Development Officer and Block Development Officer to the Project Officer. This causes delay. It is suggested that the present procedure may be remodelled by constituting a committee of small and marginal farmers and agricultural labourers at the village level and the committee should recommend the applications to the Block Development Officer for onward transmission to the Project Officer for sanction of subsidy.

Farmers are identified on the basis of land records which are not up-to-date. So some really deserving farmers are deprived of the benefits.

The funds are misused by the beneficiaries. So it is suggested that the Village Development Officer may be asked to supervise and report to the Block Development Officer.

The personnel of Project Office are deputed from foreign departments. It is suggested it should have its own department establishment ☐

A Club with a Difference

At Melpattadai slum (Madras City) a Social Reforms club, is functioning as the village panchayat The members are exclusively from the Scheduled Castes. Conditions stipulated to get the membership are as follows :—Should be married and should have only one wife ; must be above 35 years ; should be teetotaller ; should own a house ; should not have been punished for criminal offence, and should be continuously residing at Melpattadai for more than 25 years. All members are duty bound to obey the decisions of the club.

Strict discipline is enforced amongst the members. All petty quarrels and disputes come before the club. The decision of the club is final. The Melpattadai village Social Reform Club had taken up the grievances of the people such as sanitation, health, public distribution, etc with concerned authorities and got them redressed.

V. GOVINDASWAMY
FIELD PUBLICITY OFFICER
PONDICHERRY

Barthal: the oilseed village

S K SHARMA & R.P. SINGH

Untapped potential in oil seeds production, increasing population and consequent rise in demand have created an acute shortage of edible oils. The demonstration plots in Barthal, have established that there can be a three-fold increase in the yield of oil seeds, provided the package of practices prescribed by the Indian Agricultural Research Institute, New Delhi are adopted.

ACUTE SHORTAGE of edible oil, increasing demand and high import bill have highlighted need for maximising native production of oilseeds. Oil seeds constitute an essential component in our daily diets, and provide raw materials to a number of industries All oilseeds, together, occupy an area of 16.5 million hectares and account for about 10 per cent of the total cropped area per annum They contribute around 9 per cent of the total agricultural income.

Rapeseed-mustard is one of the major oilseeds of our country, grown mostly in northern India It is the most widely used edible oil in north, second in area, in production and productivity. The Indian Agricultural Research Institute, New Delhi, recommended a package of practices, to treble the present output of six quintals per hectare. This fact has been amply demonstrated in Bharthal--one of three villages adopted by the Institute under its Operational Research Project on Total Transfer of Technology.

TWO demonstrations—one each of Pusa Bold and Pusa Kalyani varieties were laid out in Bharthal in 1979. The stand of crops in the demonstration plots was so excellent that it attracted the attention of the farmers. Not only that, the yields obtained and the net returns therefore, as shown in the table, were highly encouraging and motivating, not only for the demonstrating and other farmers of the village but even for the extension personnel and visiting scientists of the Institute.

TABLE 1

ECONOMICS OF RABI DEMONSTRATIONS (1979-80)

Village	Crops	Varieties	No. of Demonstrations	Average Yield Q/ha.	Average Gross return Rs./ha	Total cost of production Rs./ha.	Cost of production Rs./Q T	Net Return Rs./ha	Net Benefit/Cost Ratio
Bharthal	Wheat	HD 2204	22	50.02	6753	3732	66.30	3021	0.81
		HD 2177	10	49.10	5629	3747	67.80	2882	0.77
		HD 2009	1	50.00	6650	3750	66.50	2900	0.77
	Barley	DL 85	2	37.50	4125	2250	54.55	1875	0.83
		DL 3	3	37.10	4081	2240	54.89	1841	0.82
		DL 200	2	36.00	3960	2240	56.67	1720	0.77
	Gram	BG 203	4	15.55	4043	1950	120.58	2093	1.07
	Mustard	P Kalyani	1	20.00	6100	2170	106.72	3930	1.81
		P. Bold	1	21.75	6634	2225	100.75	4409	1.98
Bamnauli	Wheat	HD 2204	12	51.00	6865	3755	66.45	3130	0.83
		HD 2177	8	46.50	6278	3732	71.34	2546	0.68
	Barley	DL 3	2	33.00	3630	2440	67.22	1190	0.49
	Gram	BG 203	1	21.50	5590	2025	90.56	3565	1.76
	Mustard (U.I.)	Pusa Bold	1	16.50	5033	2005	110.51	3028	1.51
Pochanpur	Wheat	HD 2204	15	49.74	6715	3788	67.69	2227	0.77
		HD 2177	8	47.31	6387	3738	70.23	2649	0.70
	Barley	DL 200	1	42.50	4654	2260	48.58	2394	1.06
		DL 65	1	36.50	4015	2230	55.54	1785	0.80
	Gram	BG 203	1	18.00	5490	1975	89.94	3515	1.78

U I. Unirrigated.

Cost of Production includes all cash and non cash inputs associated with production Gross Return includes value of main and by-product at farm harvest price.

As it appears from the table, mustard was found the most remunerative among all the rabi crops grown in the village. Encouraged by the impressive results, 15 demonstrations of only 'Pusa Bold', one of the most promising varieties of mustard in terms of both yield and oil content, were conducted in 1980 and the average yield obtained was as high as 24 quintals per hectare. Following a review of the yield performance of 'Pusa Bold' and enthusiastic response of farmers, Bharthal was declared by the Institute as 'Oilseed village' with the idea to bring more and more area under mustard with emphasis on 'Pusa Bold' ensuring adoption of package approach so as to exploit yield potential of the recommended varieties. As such, 50 demonstrations of mustard, 40 on 'Pusa Bold' and ten on other varieties were conducted last year. The yields of 'Pusa Bold' ranged from 14 to 22 quintals per hectare, the average being 18.25 The average yield of other varieties was found to be 15.49 quintals per hectare, the maximum and minimum being 14 and 15.20 quintals respectively.

THE RESULTS OBTAINED in Bharthal, the oilseed village established that there exists a considerable untapped production reservoir in oilseeds, and the gap between the actual and the potential yields of oilseeds can be bridged with determined efforts.

It is quite satisfying to find that the Oilseed village witnessed the increase in area under pure mustard crop and that too with recommended varieties from almost zero in 1978 to 78.5 acres in 1981, just within a span of three years This points to a better future so far as oilseed production is concerned.

Fifteen demonstration plots of Pusa hold mustard yielded 24 quintals ha on an average, in 1980. The yield of the small variety, in 1981, was 18.25 quintals|ha against the average of other varieties 15.49 quintals|ha.

What exactly is being done in Bharthal to maximise production and productivity of oilseed is nothing more than highlighting a few key factors in successful cultivation of oilseeds. These factors are :

(a) Sowing of improved seeds at proper time.

(b) Application of recommended doses of fertilizers.

(c) Thinning, if needed, to ensure optimum plant population.

(d) One or two protective irrigations, first 20—25 days after sowing and second at the time of flowering or pod-development stage, if necessary

(e) Timely adoption of plant protection measures against aphids, the most important pest of the crop.

Barhal, the oilseed village brought to light the existence of considerable untapped reservoir in oilseed and the gap between potential and actual yields.

That Barthal is an Oilseed villages may give the readers an impression that other crops grown in the village are not being taken care of in terms of technology transfer. This is not, however, the fact. What oilseed village simply means is added attention to oilseeds. ☐

CIFNET's Boys Dare the Arabian

When monsoon hits the western coast the students of the Central Institute of Fisheries, Nautical Training and Research (CIFNET), Cochin dare into the Arabian Sea to explore its turbulent heart.

The period of the monsoon being the roughest for operations in the sea, the CIFNET sends its trainees into the Arabian Sea to gain practical marine experience during that period. **Most of the trainees are** teenagers.

This year they were sent to dangerous seas dotted with corals around the Lakshadeep archipelago. For three weeks they underwent intensive training under exacting weather conditions. They studied the famous Tuna grounds and other fishing areas near the islands. They also gained experience in hooking Marlins and Sharks. PRASIKSHANI was the CIFNET vessel assigned for their training.

More than 2,000 people have been trained in fishing and allied crafts such as boat building, net fabrication, radio telephones, shore mechanisms etc. by the CIFNET since its inception in 1963. Trainees include those who were deputed from various foreign countries, under international agreements.

CIFNET is a pioneering institute of the country in the field of fisheries training. Its units in Madras and Vishakhapatnam are engaged in survey and training programmes on the east coast. ☐

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Planning aims to bridge the gap between the poor and rich. But despite planned economic development most of our rural folk continue to be below the poverty line. Palmyrah workers of Kanyakumari in Tamilnadu are no exception. Like their counter parts in other parts of the country, they are mostly illiterate and engaged in traditional and seasonal employment of tapping. They have a very low per capita income of Rs. 25 per month, with the result they live on less nutritious diet. Here is a study of the income and expenditure pattern of the palmyrah workers of Kanyakumari.

Plight of tappers in Kanyakumari

DR. C. HARICHANDRAN

IN THE ANNALS OF the post war economic growth, reduction of poverty and raising the living standards constituted the core of the welfare and development programmes. But a glance at the available recent statistics would reveal that 26 years of planned economic development has not had a satisfactory impact on the life of the rural folk and it is a visible phenomenon that the gap between the rich and the poor has widened. There was no clearly defined rural development strategy in the past and hence the opposite income movement effect in economy.

A study carried out by the Palmyrah Workers Development Society reveals that there are 19,819 households engaged in the palmyrah industry in Kanyakumari District which is in the southern most part of Tamil Nadu An attempt is made in the paper to analyse the income and expenditure of the families in detail in the light of other backgrounds

Tapping is a monocaste occupation as far as the present study area is concerned. A good percentage of workers take up climbing by tradition or choice whereas 32 per cent are compelled by circumstances. It is of interest to note that nearly 55 per cent of the workers belong to the age group below 40 and the rest above 40 years. Over 70 per cent of the workers climb under varam system which means 50 : 50 sharing basis. Of the total workers 61.38 per cent are Hindus and the rest Christians. The workers have large families There are six members on an average in every family. There are 240 households having members even above 10. Nearly 6 per cent of the total workers are landless, 33.86 per cent have below 10 cents of land whereas 47.37 have lands upto 50 cents.

EDUCATION AND EMPLOYMENT

Their literacy rate is as follows : upto elementary 30 per cent. higher elementary 6 per cent and high school 0.5 per cent The available data on education shows that the educational background of their children also is poor.

THE NATURE OF employment of the tapping industry is typical. In this respect the tapping industry clearly marks it off from other village industries which provide employment throughout the year. To potentiality of the industry is such that it offers full employment for a period of five months from September to January in a year Due to the seasonal nature of tapping the beginning and end viz, during the months of July, August, February and March, the tappers get less work. it is called as the period of under employment and the period from April to June is unemployment or off season to the workers

Mostly the palmyrah workers of Kanyakumari are illiterate. Out of 19,819 households, 30 per cent have elementary 6 per cent high elementary and 0.5 per cent high school education. They take to tapping by tradition and some of them engage themselves in other avocations like bee keeping, cattle rearing etc. also.

The households of the artisans derive income from tapping, earnings of other working members, property and other sources like bee-keeping, poultry, cattle rearing, vegetable gardening etc., and income from off-season employment. Tapping is the only source of income for a consideration number of workers except for a meagre income from off-season employment and income from lands.

According to income they are divided into five categories viz., A,B,C,D, and E. They may also be restated as rich, upper-middle, middle, poor and very poor. This classification is made among the palmyrah workers and not in comparison with other sections of the society. The households classified according to various income categories are shown in the following table.

Category	Income levels (in Rs.)	Number of households	Percentage to total household
A.	Above 5,000	136	0.7
B.	3,500 - 5,000	750	3.9
C.	2,500 - 3,500	3,005	15.6
D.	1,500 - 2,500	9,790	51.0
E.	Below 1,500	5,509	28.7
	Total	19,189	100.0

As shown in the table, households having an annual income of above Rs. 5,000 come under 'A' category. When analysing the income, one can make sure that the entire income cannot be from tapping alone

Out of the 19,189 households of the palmyrah workers in the district 135 have an annual income above Rs. 5000 and 5,509 have below Rs. 1,500 The remaining 13,545 households earnings range from Rs. 1,500 to Rs. 5,000. In the first category the income is generated not from tapping but from landed property. But their percentage is quite negligible.

Their income from landed properties and other sources is found to be higher. As shown in table out of 135 households, 17 have income above Rs. 5,000 from tapping alone. It is revealed that 22 households have an income of Rs. 10,000 Their income is higher due to the fact that the number of working members and income from land is reported to be larger. However, as one might expect, these households account for a negligible percentage. Qualitatively speaking, it is found that the propensity for saving and investment is greater in this group

Nearly 4 per cent of the households come under the income slab between Rs 3.500 and Rs. 5,000. They mostly own trees for their climbing requirements and they have income from land and other sources It is followed by the income slab of Rs 2.500 to 3,500. It covers only 15.66 per cent of the households They generally do not have large income from other working members of the family They derive some income from land and the rest from tapping. The bulk of the households comes under poor and very poor. They account for about 80 per cent of the households. The households under these categorise need more elucidation They are landless or have lands upto 10 cents or so. Also, they practically don't have the income from other working members with the exception of 473 households. The study shows that the per capita income is very low practically in the lower income groups

SO FAR THE ASSOCIATION of family size with household income has not been brought into the picture Only the income levels of different households have been described It would be better to look into their per capita income. The households classified according to per capita income are shown below.

Per capita annual income (in Rs.)	Number of households	Percentage to total household
Below 300	6,354	33.11
300 - 400	5,532	28.83
400 - 480	3,449	17.98
480 - 600	1,858	9.69
600 - 720	1,017	5.29
Above 720	979	5.10
Total	19,189	100.00

It is clear from the table that on an average the per capita income of one household is less than Rs. 25 per month out of every three households It is far below the national minimum The bulk of the households, nearly 80 per cent, comes under the per capita monthly income level of poverty level according to the norm of the National Council of Applied Economic Research The rest are above the higher incomes generally having small family size coupled with earnings from other working members and property incomes Generally one might contend that low income of the households is responsible for low per capita income The study reveals that large family size is greatly responsible for the low per capita income of a vast majority of households Let us analyse here the association of family size with per capita income.

Family size and per capita income of households

Family size	Number of Households	Per capita Income Levels					
		Below 300	300-400	400-480	480-600	600-720	Above 720
2—4	5,619	319	1,986	1,646	742	432	494
5—7	10,043	4,465	2,549	1,213	909	460	448
8—10	3,287	1,433	955	569	188	118	24
Above 10	240	137	42	21	20	7	13
	19,189	6,354	5,532	3,449	1,859	1,017	979

It can be seen from the table that per capita income is associated with family size if we ignore a few households Households with large family size and higher per capita income have a number of working members and higher income from land.

IT IS OF VITAL interest to examine the pattern of expenditure of the households. An exhaustive study of this type requires data on all aspects Generally, the approach is to analyse how much different families spend on meeting their actual expenditure on commodities in obtaining what is considered necessary for the maintenance of health and working capacity A pertinent indicator of levels of living is provided by food consumption level Consumption in turn is measured most appropriately by the average daily calorie in-take per person Nutrition experts opine that a daily minimum desirable consumption level of a minimum diet, a human being requires for moderate activity is around 2500 calories This minimum diet would consist of 15 oz of grain, 3 oz of pulses, 4 oz of milk, 1.5 oz of sugar and 1 5 oz of oil

The average per capita income of a palmyrah worker is Rs. 25 per month. The higher the number of members in a household, the higher is the per capita income. About 13,570 households have family size ranging from 5 to more than 10

Our data do not enable us to make this type of estimate. However we have data relating to consumption expenditures incurred by households for a month during the peak season assuming that in the peak season they get adequate employment and income, of course enabling them to consume the minimum food requirements.

There are conventional and non-conventional expenditures. Different items of conventional expenditure are food, clothing, education, medicine, fuel and lighting etc Expenditures incurred on festival occasions, marriages and so on are non-conventional items Conventional items can be further classified into food and non-food items. It is better to look at the different items of expenditure.

Food being the most essential one, a minimum quantity at least is required for human existence. As should be expected, expenditure on food items forms the substantial portion of the household income. Palmyrah Workers', food is mainly rice, tapioca and fish. But we do not have adequate data to analyse the different food items like pulses, cereals, tapioca, fish, egg, meat, milk products etc. It is revealed that they are not provided with minimum desirable consumption standards. It is also evident from the survey that protective foods like milk, egg, meat, fruits and edible oils are only rarely used. It is useful to look at the share of food items of different income groups.

IT IS SEEN IN THE SURVEY, when analysed into three different groups, only 18.78 per cent of the households spent below 70 per cent of the household income on food items Nearly 54 per cent spent between 70 and 80 per cent, whereas 28.79 per cent spent over 80 per cent, of the household income on food In order to get a clear picture, the percentage expenditure on food items by different income groups is given below. The total households classified according to their percentage of expenditure on food is shown in the following table.

Income Category	Percentage of income spent on food				
	Below 70	70-80	Above 80	Number of households	Percentage to the total households
A	106	24	5	135	0 70
B	579	134	37	750	3 90
C	2,165	716	124	3,005	15.66
D	543	6,784	2,463	9,790	51 04
E	96	2,518	2,895	5,609	28 70
	3,489 (18 18)	10,176 (53 03)	5,524 (28.79)	19,189 (100 00)	100.00

We see that expenditure on food takes a substantial portion of the income of households The percentage share of food declines over the income groups. The lower income groups spend a higher percentage on food as is evident from the table Majority of household as indicated in A, B and C categories which form about 20 per cent spend below 70 per cent of income on food Of the remaining 80 per cent (both D & E) large number of households in D category spend between 70 and 80 per cent of the household income on food Over 50 per cent of households in the last category spend above 80 per cent of their income on food The pattern of expenditure appears to follow Engel's Law of Family Expenditure. Engel truly says that the lower income groups spend a higher percentage on food.

It is also evident that with the increase in income the amount spent on food in general, diminishes. But the proportion of expenditure on protective food diminishes at a marginal rate. Generally speaking, for the highest income group the amount spent on milk, meat, egg, fruits, edible oil etc. is higher that in that spent on cereals and pulses. But the expenditure pattern of these households would only disprove the general proposition. The consumption of cereals and and pulses seems to dominate the households in all income groups.

In the above paragraphs, the various households' expenditure on food items is discussed. It would be relevant here to analyse the per capita expenditure on food. The distribution of households according to per capita monthly expenditure on food is given in the following table.

Expenditure (in Rs.)	Number of households	Percentage to total households
Below 20	7 636	39 79
20 -30	8,670	44 92
31--40	1,932	10 07
41- 50	721	3 76
Above--50	280	1 46
	19,189	100 00

The food consumption standards (measured through per capita expenditure) of about 15 per cent of the households appear to be better. Their regular diet generally consists of more quantity of rice, tapioca, vegetables and so on Protective food items are not commonly used even in households with higher per capita expenditure. About 45 per cent of the households are covered between the per capita food consumption of Rs 20 and Rs 30 At this level of consumption, rice being costlier than tapioca they have more tapioca and less rice.

Most of the households are growing under heavy debts. They borrow for productive and unproductive purposes About 20.21 per cent workers borrow for food, 17.88 per cent for purchasing land and house construction, 2.66 per cent for children's education. 18.39 per cent for marriage purposes and 26 60 per cent for medical and other purposes.

But per capita expenditure of 39 79 per cent of the workers is below Rs. 20. With this level, they cannot even have the bare minimum requirements. For a minimum level of living for rural labour, G Parthasarathy, S. Venktat Rao and G. Dasaradha Rama Rao (Parthasaithy, G. Venkata Rao and Dasaradha Rama Rao-"Character of poverty among Rural Labour"—A study of West Godawari District. Economic and Political Weekly Vol. IX, No. 13, March 30th 1974) estimate that the average per capita per annum food requirement would come to Rs. 270.10. If we take Rs. 270.10 per capita food consumption as the minimum, it is clear that 39.79 per cent of the households have a per capita food consumption of below Rs. 20 per month. Or in other words, it works out to below Rs. 240 per annum It is needless to emphasise here that food consumption standards are not only far below the minimum level but are also deplorable. The poor diet pattern in turn greatly affects the health conditions of the households.

The expenditure in clothing does not figure much in the budgets of a number of households 22.64 per cent of the households spend less than Rs 150 per annum and 58.71 per cent Rs 150 to Rs. 300. It is reported that 1673 households have no expenditure on education Nearly half of the households spend less than Rs. 50 per annum At the same time, there are 173 households spending more than Rs 1,000, to teach children in schools and colleges Not less than 30 per cent of the households spend 3 per cent of their income on medicine and 50 per cent spend 3 to 5 per cent Another regular item of expenditure is fuel and light. The survey shows that 10 to 15 per cent of the income is spent on fuel This is the single item which consumes the highest percentage next to food. Many households do not have consumer durable and this item does not figure much with them. Expenditures on other items like smoking, recreation, travel etc., are quite insignificant.

SO FAR WE HAVE DISCUSSED the conventional expenditures But coming to non-conventional items they are disturbing factors due to their lower frequency If we decide to omit this non-conventional expenditure and confine ourselves to conventional expenditures only, a more consistent pattern appears to emerge. Here it is necessary to describe the per capita expenditure of different households. The households below the poverty level can be identified with the help of per capita expenditure analysis It is revealed in the survey that there is clearly a marked relationship between family size and per capita expenditure The distribution of households according to family size and per capita expenditure is illustrated in the table

Family size	Per capita expenditure per annum (In Rs)							
	Below 300	300-400	400-600	600-720	720-900	Above 900	No households	Percentage to total households
2—4	698	3,045	863	439	500	74	5 619	29 28
5—7	1,550	6.184	1,272	631	370	36	10 043	52.34
8—10	1,896	863	295	185	36	12	3,287	17 13
Above 10	81	64	34	37	21	3	240	1.25
	4,225 (22 02)	10,156 (52 93)	2,464 (12 84)	1,292 (6 73)	927 (4 83)	125 (0 65)	19,189 (100 00)	100.00

There is no precise method to measure or identify poverty. But various figures are adopted from time to time taking into consideration the average need for a family faced with the cost of living. A study group appointed by the Government of India in 1962 recommended a per capita consumption of Rs 240 per annum at 1960-61 prices Dandekar and Rath consider a per capita annual expenditure of Rs. 324 in rural areas and Rs. 486 in urban areas at 1968-69 prices for a minimum level of living This was Rs. 37 per month according to 1971-72 prices. Thus according to 1971-72 prices, around Rs 440 per capita expenditure per annum is required for a minimum level of living. Thus minimum has swelled since then. However, if we look at the data presented above, according to 1979-80 prices, it is clear that the per capita expenditure of over 99 per cent of the households is below Rs. 900. Thus even a bare minimum is not provided for a vast majority of households.

From the income and expenditure analysis it can be seen that the general tendency is to under report their incomes and overstate their expenditures This fact is evident if one clearly analyses the per capita income and expenditure tables For instance, the data show that 979 households have per capita income above Rs 720 per annum But the per capita expenditure for the slab between Rs 600 and Rs 720 we can find out differences between income and expenditure Also one cannot be justified in arguing that these differences are due to amount spent on consumption expenditures In actual practice, only the lower income groups go in for credit for consumption expenditure and not the upper income groups

When analysing the association of family size with per capita expenditure, poverty exists at a greater level due to large family size for a large number of households Per capita expenditure is a decreasing function of family size if we omit a few households. The per capita expenditure of these households is higher because their level of income is also larger Even if a family has ten member or so, provided that it has two to three earning members of large income from lands etc, the per capita expenditure of such households need not necessarily be low However, there is close relationship between family size and per capita expenditure

SAVING IS THAT part of income not spent on consumption The saving capacity depends upon the will to save, power to save and the facilities to save The available data show that their power to save is really poor Their will to save also is not encouraging. Regarding saving facilities most of them are ignorant of post office savings and Banks They are not aware of L.I.C and the benefit of insurance Out of the total workers 14.26 per cent of them have savings ranging from Rs 50 to Rs 1,000 There are a few households with savings of even more than Rs 3,000 during the last one year Higher percentage of savings is positively correlated with higher income groups A larger part of their savings is utilised by a majority on property and improvement of their houses It is found that at low per capita income their savings as well as accession to fixed capital are less

GENERALLY, MOST OF THE households are afflicted by debt. Their self efforts do not relieve a majority from debt. like our poor agriculturists they are born in debt, live in debt and die in debt. They borrow year after year but most of them are not in a position to pay off their debts. For every seven workers, as an average, there are 6 indebted. They borrow for productive as well as unproductive purposes. It is seen in the survey that 20.21 per cent of workers borrow for food, 17.88 per cent for purchasing land and house construction, 2.66 per cent for their children's education, 18.39 per cent for marriage purposes and 26 60 per cent for medical and other expenditure. Their level of indebtedness ranges upto Rs. 5,000 and for 2.07 per cent above Rs. 5,000. Regarding the various sources of borrowing, it is found that more than one third of the workers are at the mercy of village money lenders and the rest borrow from sources like land mortgage, relatives and neighbours, banks and co-operative societies.

A majority of these workers live in simple houses both tiled and thatched. A considerable percentage live in thatched huts Generally the walls of huts are made of coconut leaves Palmyrah as well as coconut leaves are used for thatching roofs The floor is not cemented. The huts during the rainy season, leak and so the floor is wet. They have no comfortable beds, bed sheets etc. They use mats made of palmyrah leaves. Also their huts consist of only one room or so Within which they have their kitchen too. It is found that 40 74 per cent of the workers live in tiled houses whereas 50 13 per cent live in thatched houses. Those who have tiled and terraced houses hail generally from economically well-off sections Out of the total workers, there are 1,132 landless and there are 601 workers living in huts A family consisting of members ranging from 4-10 are forced to live in a room or two As a result, their health, hygiene and sanitary conditions are much affected.

Needless to emphasise here that their social life is poor. They are still traditional in their approach though they are aware of the dynamic changes taking place in the countryside. The survey reveals that 57 50 per cent of the workers are of the view that they are respected because of the nature of their occupations. The prevailing mentality of the rest is to be satisfied whatever they get and whatever respect they enjoy. Their participation in the religious, social, institutional and cultural life of the villages is almost nil. A considerable number of them are of the view that their social life and status can be improved, provided they have more land, good houses etc. Education is conceived by a number of workers as a real instrument of change and development ☐

IRCON Bags Rs 3 crores Worth Iraqi Contract

Indian Railway Construction Company Limited (IRCON), a Government of India, Undertaking under the Ministry of Railways, has been awarded a contract of one million Iraqi Dinars (Rupees 3 crores) for supply of 35,000 numbers of prestressed concrete sleepers to Baghdad-Al-Oaim-Akashat Railway Organisation The supply of the sleepers has to be completed by Decembr, 1982

35,000 Bio-gas plants in Gujarat by 1985

Bio-gas is a boon to villages to solve their energy problem. So, all out efforts are being made to set up family size bio-gas plants in all the villages in a phased manner. Gujarat has an ambitious plan to provide 35,000 such plants in its rural areas by 1985. So the entire governmental machinery is geared up to take care of all aspects of implementation—technical, financial, and procedural—of the bio-gas production programme in the State.

OUT OF 35 MILLION population, Gujarat has about 27 million in rural areas and 15 million cattle. Gujarat has been the pioneer in the country in setting up about 100 gobar gas plants as early as 1955-56. By 1981, Gujarat had about 12,500 plants as against 1,00,000 plants for all India. In other words, Gujarat accounted for about 12.5 per cent of total plants set up in the country.

By 1981, Gujarat had 12,500 bio-gas plants. The Sixth Plan envisages setting up of 35,000 family size plants during 1981—85. They would generate 32,000 KW of energy at a cost of Rs. 25 crores. The energy produced would be equivalent to that given by 300 lakh litres of kerosene of Rs. 4 crore per annum. They would save above 2 lakh MT of firewood.

The plant envisages setting up 35,000 family size bio-gas plants in Gujarat during 1981—85. They are expected to generate 32,000 KW of energy in the decentralized sector at a capital cost of Rs. 25 crores. The energy produced by the bio-gas plants would be equal to 300 lakh litres of kerosene valued 2 lakh MT of firewood. Though the scheme is in operation throughout the State, the plants would be concentrated in ten districts. The strategy is to set up bio-gas plants in clusters of selected villages, so that it will have "demonstration effect" and motivate other areas automatically. It is also proposed to concentrate the scheme in areas where schemes like Operation Flood are in vogue so that this compliments other programmes.

AT THE STATE LEVEL a Coordination, Review and Monitoring Committee has been set up to periodically review the progress and issue necessary guidelines to achieve the target. Gujarat State Khadi and Village Industries Board and Gujarat Agro Industries Corporation Ltd. (GAIC) are the implementing agencies in the State. The project envisages that in addition to the implementing agencies, voluntary organisations, rural development agencies and panchayats would motivate large number of farmers to put up the bio-gas plants and, wherever possible, they may take up the entire work of putting up the plants for which they are eligible to get supervision charges from GAIC|KVIB.

KVIB is in the field since 1950s and GAIC entered the field in 1977-78. The bio-gas plants set up by GAIC upto 1981-82 come to about 1500. KVIB Ahmedabad have so far set up about 12,110 bio-gas plants in Gujarat. Besides KVIB has recognized certain institution|individuals to carry out construction of bio-gas plants on supervision-charge basis. Gujarat Agro Industries Corporation is the Nodal Agency for the implementation of the programme in Gujarat State. All the subsidy to be paid by the Government of India and the Government of Gujarat for the direct cost of the plants, grants for turn-key jobs, incentives to the village level functionaries, training programmes, supply of cement, steel etc. are being directly allocated to GAIC which will coordinate with the other implementing agencies like Khadi and Village Industries Board etc. and implement the project in the State in accordance with instructions of Government of India and Government of Gujarat.

In the case of small and marginal farmers, subsidy rate works out to 40 per cent of the direct cost of the plant. In the case of others it is 33.33 per cent of the direct cost of the plant. To get the subsidy the implementing agencies have to put up their claims to GAIC which, in turn will put up consolidated claims to state and Central Governments. Government of India shall pay Rs. 200 per plant to the implementing agencies, on turn-key basis, after the completion of the Bio-gas plant.

Gujarat State Khadi and Village Industries Board (KVIB) and Gujarat Agro Industries Corporation Ltd., (GAIC) are the implementing agencies of the bio-gas scheme. KVIB and GAIC have so far set up about 1,500 and 12,110 plants respectively in the State. These two Agencies have involved some voluntary organisations also in the implementation of the scheme.

THE VILLAGE LEVEL functionaries|motivators are eligible for a cash incentive of Rs 30 per plant, for providing support to the programme by collecting application, motivating beneficiaries, providing technical guidance etc.

To achieve the target of the Sixth Plan, the project envisages imparting training to various category of persons.

The promoters will work in a village or group of villages. Their main function is to contact the cattle owners and convince them of the importance of bio-gas plants and the benefits that accrue from them.

The supervisors, after the requisite training, will be attached to various institutions working under KVIB or GAIC. The plant owners will pay them Rs. 200 per plant His main functions include selection of location and size of the plant, procurement of raw materials from implementing agencies, arranging loan from banks, carrying out the formalities to obtain subsidy and imparting training to house-wives and plant-owners about the proper maintenance of the plant

A number of subsidies and incentives are being given to popularise and set up bio-gas plants in Gujarat. Small and marginal farmers get 40 per cent of the total cost of the plant as subsidy and others get 33.3 per cent. The village level functionaries|motivators get a cash incentive of Rs. 30 per plant for motivating the farmer, collecting application and doing other services.

THE TRAINING FOR masons aims at improving his skill to erect bio-gas plant as per the specification so that the plant does not develop any cracks.

The training imparted to the housewives by the supervisiors will relate to the maintenance of the plant when it starts functioning which includes preparation of slurry, safety precaution etc.

In accordance with the cost estimates worked out for different sizes of bio-gas plants of KVIC and Janta Models, the plant owner is eligible to get bank loan. The banks will grant loan based on the techno-economic feasibility and viability report of the implementing agencies. The implementing agencies in consultation with Agricultural Refinance and Development Corporation—Gujarat Region, have worked out the Bank-wise and District-wise banking plan for the year 1981-82 and 1982-83. The plan assumes that only 60 per cent of the total beneficiaries require bank finance.

The setting up of bio-gas plants has its favourable impact on the growth of the units in the small scale sector. The requirement of gas holder for KVIC model and the need for burners and pipeline in the case of all types of bio-gas plants have already provided opportunities for the growth of units producing bio-gas appliances in the small scale sector.

THE KVIC AND GAIC have entered into service contracts with some of these units engaged in fabrication work, as per which, the implementing agencies will provide steel sheets to the units and pay service charges to the unit at a rate fixed per gas holder The other units produce gas holder to meet the demand emerging from individual plant owners. These units purchase their raw materials from open market.

The target of 33,000 units fixed for 1982—1985 will enable the expansion of existing units and setting up of new units in the small scale sector in the above production lines.

The Government of India, treats the units producing bio-gas equipment as small scale units. The Government of India has exempted the production of bio-gas appliances from the purview of Central Excise duty. In the Budget for 1982-83, the Government of Gujarat has reduced the Sales Tax on bio-gas appliances from 10 per cent to 1 per cent.

DURING THE FIELD VISIT, gas plant owners expressed the following operational problems. In the case of KVIC design the main problem has been corrosion of the gas holder and the pipe-line. In the case of Janata bio-gas plant, the general complaint is that the Digester Wall cracks due to hollow space and higher pressure of the gas than the walls can withstand. The other major problem has been the seasonality of gas production. During winter while the demand for gas is more, the generation of gas is less. The organic matter, water and PH have to be combined in a fixed proportion for the efficient generation of gas. However, many plant owners are not aware of this. Further the slurry has to be stirred to clear the scum formed. Frequent chocking of inlet and outlet of the gas plant and accumulation of water in the pipe-line are the other problems faced by the plant owners.

The community gas plants have their own problems. Due to non-availability of dung in the required quantity, the plants are not being utilised to the optimum level and hence the gas production is low In some cases, proper quantity and quality of water is not available. The other problem is the aversion of the rural folk to use the gas produced in plants that works on right soil. There is also the problem of distribution of gas and fixation of price for the gas consumed by each household

The establishment of bio-gas plants has given a philip to the ancillary industries. A number of small scale units producing bio-gas appliances like gas holders, burners, pipelines have sprung up. The Central and State Governments are helping these units by giving exemption from central excise duty and reducing the sales tax from 10 to 1 per cent respectively.

The banks advance loans to the farmers only if they have crop loan account with them. Further, if there is some delay|default in the repayment of crop loan, then they are denied loan facility to set up bio-gas plants At the same time the nationalised banks do not come forward to advance loans, as the farmers do not have crop loan account with them.

THE FARMERS SAY THAT, in practice, the actual cost of plant is higher than those worked out by the implemening agencies Hence they are able to get as loan only 70 to 80 per cent of actual cost of construction.

(continued on page 34)

Tamil Nadu, the most industrialised State in the South and the third, after Maharashtra and West Bengal, in India, has put up an impressive show in many fields of economy. But the State has to go a long way to ameliorate poverty and unemployment. Still the State's agriculture is dependant on the vagaries of the monsoon. Power shortages are likely to do the developmental schemes. Infrastructural and other bottlenecks are yet to be straightened. . .

Progress & problems of Tamil Nadu

—DR. ZIA UDDIN KHAIROOWALA

TODAY, TAMIL NADU is the most industrialised the southern states of India, and ranks third in industrial development among all the states of the Union after Maharashtra and West Bengal. Over 7.30 per cent of India's population lives in the state.

The economic performance of Tamil Nadu during the post-Independence period has been impressive. During 1951—1961, the urban population of the state increased by 22.6 per cent, against 11 9 per cent increase in the general population. In the next decade, the urban population rose by 38 6 per cent. The state's population went up by 17 23 per cent and the urban population by 27.72 per cent during 1971—1981. At present the percentage of urban people in the total population in Tamil Nadu is 32.98, and it occupies the second place among the states in urbanisation, after Maharashtra.

Agriculture registered remarkable progress in T. N. Total foodgrain production rose from 3.2 million tonnes in 1950-51 to over 8.2 million tonnes in 1978-79. But the state lacks in natural resources. With moderate rainfall of 97 cm per annum, less than half of the geographical area is cultivated. A quarter of the land is drought prone. . .

In the sphere of agriculture, the state has achieved notable progress. The production of food-grain rose from 3.2 million tonnes in 1950-51 to over 8.2 million tonnes in 1978-79, registering an increase of 160 per cent. Rice production trebled from two million tonnes to 6.2 million tonnes during the period. While cotton production in the state recorded an increase of 79 per cent, ragi output went up by 66 per cent. Sugar cane production was up by 47 per cent between 1950-51 and 1978-79. As a result of this increase in agricultural output, the state has gradually attained self-sufficiency in food grain.

Industrial growth in Tamil Nadu during 1960-1975 was of a high order. This sector witnessed an annual compound growth rate of 4 6 per cent during the period. In absolute terms, industrial production almost doubled. Consequently, the income generated by the manufacturing sector grew at an annual compound growth rate of five per cent between 1960 and 1975. The annual average index of industrial production in Tamil Nadu, which was at 137 6 in 1976 (base 1970-100) increased to 164 1 in 1978 and further to 172.3 in 1979. The number or registered factories in the state aggregated 9,139 in 1979 with a total strength of 573,000 workers.

The State's installed power generation capacity (both hydro and thermal) rose from 571 MW in 1960-61 to 1,220 MW by 1969-70 Between 1969-70 and 1978-79, power generation in the state went up from 3,134 million units to 6,607 million units. This is excluding the power generated from the Neyveli lignite-based power station, which was of the order of 2,493 million units in 1978-79. The total power generation, including that from Neyveli, in 1980-81 is placed at 10,546 million units.

IN THE TRANSPORT SECTOR, the length of surface roads in the state rose from 49,870 km in 1970 to 63,404 km in 1979 The length of national highways increased from 1,783 km in 1970 to 1,865 km in 1979 while that of state highways went up from 1,780 km to 1,814 km during the period. The total track kilometrage of railways increased to 6,397,35 in 1979 from 6,037.92 in 1970

During 1960—75 T. N. witnessed a high industrial growth of 4.6 per cent compound growth rate per annum. The annual average index of industrial production which was 137.6 in 1976 increased to 172.3 in 1979. But 52.12 per cent of population is below the poverty line.

The total number of scheduled commercial bank offices in Tamil Nadu was 1,060 in 1969 This number more than doubled to 2,635 in 1978. While the per capita bank deposit rose from Rs 75 in 1969 to Rs. 389.32 in 1978, the per capita credit by the scheduled commercial banks increased from Rs. 97

to Rs. 350,10 during the period. The State's literacy rate, which was 39.46 per cent in 1971, has gone up to 45.78 per cent in 1981.

The per capita income of the state is a pointer to the fact that it has still to go a long way for reaching any where near the levels of living attained by Haryana and Punjab. The figures regarding per capita income of the state for the seventies indicate that it has made relatively little progress. The per capita income of the state increased from Rs. 586 in 1976-77 to Rs. 702 in 1978-79, it remained distinctly below the all India figure of Rs. 658 in 1977-78 and Rs. 712 in 1978-79.

Installed power generating capacity developed from 571 MW in 1960-61 to 1,220 MW in 1969-70. The total power generated in 1980-81 was 10,546 million units. But power shortage is a common feature in T.N. To meet demand of 13,692 million units, the capacity required is 5,368 MW. There is no way out to bridge the gap.

THE FIGURE FOR poverty and unemployment are quite disturbing. According to the State Planning Body, the percentage of people under poverty line in Tamil Nadu is 52.12, against the country's average of 48.44 per cent. The present level of unemployment in the state is 16.1 per cent, against the country's average of 8.5 per cent.

To reduce poverty and unemployment, the State government will have to strive hard to reduce the population growth and generate more employment through faster growth in agriculture and industry in the coming years Of course, the 1981 census has given some consolation by showing that the population growth in Tamil Nadu during 1971—81 at 17 23 per cent has been the lowest for any state in India in the period.

Compared with many states, Tamil Nadu's agricultural sector lacks natural advantages With a moderate rainfall of 97 cm per annum, less than 50 per cent of its geographical area is cultivated. A quarter of the land is prone to drought. Yet another factor which comes in the way of agricultural development is that the state is teeming with small and marginal peasantry, with two-thirds of the holdings below one hectare Its share of landless labourers is also one of the highest in India

Inadequate water resources are the most important handicap the state's agricultural sector is facing today. The per capita water resources of Tamil Nadu are only 570 cubic metres against the all-India average of 4,000 cubic TMC, has been harnessed to the extent of 95 per cent. Thus, the remaining five per cent being accounted for by small streams and rivulets, there is no further scope for major irrigation projects. The available ground water too has been tapped almost to its limits. This means that the state will have to strive hard toward optimum land-water management with attention paid to conservation of water, through modernisation of canals and improvement of minor sources of irrigation, especially tanks.

Power shortages are likely to dog the state. Although this will hamper the progress of both agriculture and industry, the impact will be greater on the latter. Power requirements in the current year are estimated at 13,692 million units. The capacity rquired to meet this demand will be 5,368 MW. But even it all the present expansion schemes, including the commissioning of the first nuclear plant at Kalpakkam, are carried out the power, supply in the state will fall short of the demand.

These infrastructural and other bottlenecks are bound to affect the economic development of the state more seriously in the future. The state government is apparently conscious of the situation. The state's Sixth Plan document says strategy adopted for the Sixth Plan consists essentially in moving simultaneously to strengthen the infrastructure for both agriculture and industry so as to create conditions for an accelerated growth in investments, output and exports and to provide through special programmes designed for the purpose, increased opportunities for employment especially in the rural areas and the unorganised sector and meet the minimum basic needs of the people."

T. N. had 1,783 Kms of national highways in 1970 and 1,865 Kms in 1979. The State highways were 1,780 Kms. in 1970 and 1,814 Kms. in 1979. Inadequate infrastructural facilities are bound to hamper the State's economic development.

The Economic performance of Tamil Nadu during the Post Independence Period has been impressive But despite the tangible progress in many fields, Tamil Nadu's economy performance in many areas is unsatisfactory. □

Sales Tax Administration in India

The comptroller and Auditor General of India has brought out a booklet both in Hindi and English entitled "sales Tax Administration in India"

The booklet contains some interesting information like history of Sales Tax legislation and statistics like trend of sales tax receipts in the States over three decades with detailed statewise information for the four years ending 1980-81. It shows that from a mere Rs. 181 crores in 1961-62, the total revenue of the States from sales tax has shot up to Rs. 3.867 crores in 1980-81. The cost of collection of sales tax for the three years ending 1979-80 is shown as ranging from 0.03 per cent (Sikkim) to 6.16 per cent (Andhra Pradesh) in 1979-80.

Kolleru lake, a boon to fishermen

N. SUBBA RAO

Kolleru, a lake in Andhra Pradesh, has immense scope for developing inland fisheries. Traditionally 41,300 people of 156 village have been living on fishing in the area. A.P. government has chalked out a master plan to exploit the 7,500 tonnes per annum of fish potential worth Rs. 1.5 crores and also undertake allied activities like growing coconuts and vegetables and rearing ducks.

KOLLERU LAKE is a natural land depression between the rivers Godavari on the east and Krishna on the west, in Andhra Pradesh. It spreads over an area of 240 Sq. miles in Krishna and West Godavari districts. The lake receives drainage from a catchment area of 1839 sq. miles. The main rivulets that fall into Kolleru are Budameru, Ramileru, Tammileru and Gunderu. The lake is connected to the sea, 32 kms. away, by the only outlet called Upputeru. At the time of high tides, the sea water gets into Upputeru, and the resultant salintly in the water provides a good breeding ground for fish. Fishing is a traditional occupation for about 41,300 people in the Kolleru lake area They live in 116 villages near the lake, 40 in the middle of the lake on an island and 76 on the fringes.

Palparu fish farm is strengthened to supply 30 lakhs of fingerlings for each tank. One lakh coconut plants are to be planted on the bunds and 20,000 ducklings are to be reared.

Recognising the need for developing the inland fisheries, the Government of Andhra Pradesh took initiative and prepared a master plan during 1974 after thoroughly investigating the area The survey revealed that 7,500 tonnes of fish per annum, worth Rs. 1.5 crores could be exploited. It also highlighted greater potentialities to undertake allied activities like growing of coconut and vegetable on the tank bunds and also rearing of ducks. Based on the above recommendations the Government has undertaken a major fishery project in Kolleru lake for the first time An amount of Rs. 209 lakhs has been allocated towards this end.

The lake is a good source for fish breeding especially fish like claries, murrels, arabes, secobranchas and prawn, which are in great demand in India and abroad. Shri Kampe, a U. N. expert, who visited the area to study the proposed scheme said that "the idea of forming tanks on the lake, is a unique experiment not attempted any where in the world and the area could be a veritable gold mine very soon".

IN THE INITIAL stages of the scheme, it was technically advised to go in for smaller tanks on Five acres each which are considered as viable units. But the district administration decided to go ahead with bigger tanks of 40 acres each to rear fish to benefit more and more people on the principle of social justice The administration thought of giving a 40 acres tank to each of 100 families who will form a cooperative society. It is estimated that the 40 acres-tank would yield 50 tonnes of fish annually which means all the 100 members will be able to get Rs. 1200 each; besides the supplemental income on coconuts and vegetables grown on the tank bunds. The Andhra Pradesh Agricultural Development Bank came forward to lend Financial help The Government issued *pattas* of 40 cents each to 100 fishermen families who formed into a cooperative society, and the land so assigned was valued as wet land for purposes of securing loan to the tune of Rs. 6,000 each based on the concept of capitalisation of net income. The fishermen pledged the land with the branches of the Agricultural Development Bank and got loans for the excavation of tanks.

The villagers themselves pooled their resources at some places to advance the money to the labour to enable continous supply of labour. Besides they themselves took up the work. A Committee of 20 members both official and non-official was formed to coordinate the activities of the construction of tanks Work on all the 34 tanks was commenced.

By the end of 1980, a total of 150 fish tanks, 112 in west Godavari district, and 38 in Krishna district were completed. Out of Rs. 209 lakhs allocated, Rs. 158 lakhs had been spent.

Each tank, it was estimated, required 30 lakhs fingerlings and the fish farm at Pulapassu was strengthened to supply all the seed requirements of Kolleru. One lakh coconut saplings had been ordered to be planted on the tank buds. Order had been placed for the supply of 20,000 ducklings, so that the income could be supplemented.

Working day and night, the villagers could complete 17 tanks and some others partially by the end of

July 1976 and spent Rs. 20 lakhs on these. Steps were taken to provide the necessary infrastructure such as marketing, communications and transportation, construction of fish yards, provision of electricity to have cold storage facilities, provision of loans to fishermen, medical and educational facilities in the region and a host of other requirements to make the area self-contained and self-sufficient.

On account of the master plan, fisherman of Kolleru lake are now exporting fish to other States and countries. About 300 tonnes of fish is exported every day.

The Fisheries department stocked fish tanks with fish seed. The grown up fish were auctioned during January 1977 and an amount of Rs. 5.77 lakhs was realised. The Srungavarapupadu alone fetched an amount of Rs. 66,000.

BY THE END OF 1980, a total of 150 fish tanks, 38 in Krishna district and 112 in West Godavari district, were completed. Of the total amount of Rs. 209 lakhs allocated to the project, Rs. 158 lakhs had been spent so far.

From October 1980, the fisheries development schemes in the Kolleru lake were brought under the purview of Integrated Rural Development Programme.

By and large, the fishermen have found an improvement in their incomes compared to earlier. They are now exporting fish to different places within the country and also to other countries. It is estimated that about 300 tonnes of fish were being exported every day to different places in the country. From the earnings, the major share goes to middlemen who play a key role in the activities of the lake, and the fishermen get only meagre amounts. For exporting one kilogram of fish from Kolleru to Calcutta, the sellers get only Rs. 5 to 10, whereas in Calcutta for the same quantity of fish, the price spreads from Rs. 16 to 20.

In Kolleru fish tanks, many kinds of fish are being reared including the their prawn which is an international export variety and gets Rs. 70 per kg. in Kolleru area itself. It has great demand in countries like Japan and the USA.

Certain measures need to be taken for the proper fish exploitation as well as to get higher prices to the fishermen in the area. The Government should set up an organisation to look after the affairs of the Kolleru lake from growing of the fish till it is marketed. The role of middlemen should be minimised and cooperative marketing network be spread to fetch the fishermen better prices to their catches. Steps must also be taken to provide the necessary facilities including the daily provisions at appropriate prices to the fishermen. The administration should see that the funds allotted for the purpose are better utilised within the stipulated period, so that the funds might not go waste. Arrangements must also be made to dispose of coconuts and duck eggs at reasonable prices.

To successfully implement the plan, the A.P. government has to take certain measures to minimise the role of middlemen and to ensure proper returns to the fisherman.

18,243 Construction Works Completed in M.P.

As an important component of the 20 Point Programme, the National Rural Employment Programme is being pursued vigorously in Madhya Pradesh. As many as 18,243 construction works were completed under the Programme last year while 13,716 new works were started during 1981-82 in the State

Under the programme a provision of Rs. 2,994.28 lakh was made during 1981-82. During 1982-83 a provision of Rs. 3,068 lakh has been made. It may be mentioned that the programme aims at providing purposeful employment to unemployed and semi-unemployed men and women in rural areas besides creating permanent assets and bringing constant improvement in the income levels of the rural poor.

Outer Space and the Oceans

Work to study the ocean from space was conducted from aboard Soviet Satellites of the Cosmos and Meteor series, manned space ships Soyuz and orbital stations *Salyut*.

Observations from space have brought much valuable scientific information. In particular, the pictures obtained from the Salyut orbital stations and automatic satellites, helped to study shallow shelf zones of the Black, Azov, Caspian, Aral and Okhotsh Seas. Interpretation of space pictures of coastal waters has made it possible to identify regions with a promise of oil and gas. Regular information was supplied on zones of storms and ice conditions in regions of interest of shipping. The experiments carried out with the aid of specialised oceanographic satellites have marked the establishment of systems of prompt global measurement from space of the ocean characteristics necessary to predict weather and study the hydrophysical and biological fields. An international rescue system for ships and aircraft in distress in the seas through special satellite is also being worked out.

Tomato Seed Extraction

The experts of the Department of Food, Science and Technology of the Punjab Agricultural University have developed and standardized a new technique for drawing out seeds from tomatoes Called the 'cold-break method', it gives 60 to 70 per cent more seed than the present method in use. The juice obtained as a by-product by this method is of very good quality.

Economic Notes

Guidelines for Annual Plan 1983-84

The Planning Commission has issued fresh guidelines to the State for formulation of Annual Plan 1983-84. The emphasis in the Annual Plan will be on the new 20-Point Programme designed to emeliorate the economic condition of the weaker sections of society. Environmental protection is yet another sphere stressed by the Commission. Some States have already set-up suitable machinery for the purpose. The Planning Commission has asked other States to do so without further delay. The States had earlier been advised to set-up science and technology councils' bodies. In the sphere of education, the States have been asked to prepare a carefully designed programme on vocationalisation of secondary education In view of the dwindling resources of fuel and energy in the country, the States have been asked to give priority to programme for development of renewable energy sources through social farm forestry and plantation of quick growing species and utilisation of biogas plants, windmills etc

Urging the States to give greater attention to district planning and block planning, the Planning Commission has advised necessary steps for district-wise disagregation of the available outlays of the State Plans The States which have already implemented this have been asked to indicate the progress of expenditure and physical targets/achievements district-wise, under different heads, and to indicate the financial provision and physical targets for 1983-84 The States which have not done so yet have been asked to take urgent steps to decentralise the planning process The States have also been asked to initiate studies and to take some preliminary action on new projects and schemes which are to be included in the Seventh Plan

Annual Telecomunication Plan for 1982-83

The P&T Department has an approved outlay of Rs. 477 crores for the annual telecommunicaation plan for 1982-83

The Department proposes to proved 2.6 lakh lines of new telephone connections and add three lakh lines of switching equipment during the year. 685 new telephone exchanges, most of which would be in the rural and semi-urban areas, would be opened during the year and an addition of 24, 100 Trunk Automatic Exchange lines is contemplated

In the long distance transmission systems 1513 route Kms. of coaxial cable systems, 4258 route Kms. of microwave radio relay systems and 1555 route Kms. of UHF systems are proposed to be commissioned. 2300 long distance public call offices and equal number of telegraph offices are planned to be opened during the year. Twenty new telex exchanges are to be opened 5660 new local telex lines and 5300 electronic transit telex lines are proposed to be added. This would enable the Department to provide 5000 new telex connections during the year.

Drinking Water for Nagaland Villages

In Nagaland 757 more villages will be provided with drinking water facility this year

So far 577 villages with a population of 3,29,775 have been provided with piped water supply under the centrally sponsored Accelerated Rural Water Supply Programme. The State Government proposes to cover all the villages, numbering 1,045, by the end of 1990

Irrigation Scheme of Gujarat and J & K

Jankhari Reservoir Project of Gujarat has been approved by the Planning Commission at an estimated cost of Rs. 18.70 crores.

The project on river Jankhai, a tributary of the West flowing Purna river, is located near village Jankhari of Vyara Taluka of Surat district of the State. When completed, the project will irrigate 20,612 hectares annually in Vyara and Songad Talukas of Surat district.

The Planning Commission has also approved the revised estimates of Koil lift irrigation scheme of Jammu and Kashmir at an estimated cost of Rs. 5.56 crores. The revised scheme will irrigate 2323 hectares annually in the State.

Five New Gas-based Fertilizer Plants

The Government of India have finally selected the sites for five new gas-based fertilizer plants The four new plants in Uttar Pradesh will be at Babrala (distt. Badaun) Aonla (distt. Bareilly), Shahjahanpur (distt. Shahjahanpur) and Jagdishpur (distt. Sultanpur). The new plant in Madhya Pradesh will be at Bijayapur (distt. Guna).

Over Rs. 10 Crores worth Scholarships Released

The Central Government extended assistance to the State Governments for scholarships to the Scheduled Castes and Scheduled Tribes to the tune of Rs 26.44 crores during 1981-82, more than twice the amount released during 1980-81 which was Rs 10.76 crores

Involvement of School Children in Tree Planting

The Centre has asked the States to take measures for greater involvement of school going children in afforestation programme. An important step proposed is to encourage schools to raise nursery. The inputs for raising seedings such as polythene containers, seeds, fertilisers could be provided by the Forest Department as was being currently done by some of the states like Gujarat, Maharashtra and Rajasthan. The Department could later purchase the seedlings which would provide cash incentive to the school children.

Afforestation, social and farm forestry, forms an important component of the new 20-point programme and the Prime Minister has expressed desire to ensure the participation of school children in the social forestry programme launched throughout the country. In this connection, a meeting was held recently by Shri S. P. Mukherji, Secretary, Ministry of Agriculture. It was proposed at the meeting that the raising of seedlings and tree planting should be included as a practical subject in the existing curriculum on environment for school children. Adoption of trees planted at various sites, including road sides by individuals or groups of children and display of their names against the trees was also recommended

Another decision taken was to issue instructions to educational institutions in the states to involve the N.S.S. volunteers, N.C.C cadets, boy scouts and girl guides in planting of trees during their annual training camps.

In order to encourage educational institutions to actively participate in afforestation programme, incentives, like awards, prizes and certificates to teachers, children and institutions doing work may be instituted.

Smt. Kamala Chaudry, Vice-President of the newly created Society for Promotion of Wasteland Develtpment laid stress on involvement of parents for planting saplings through children

In this connection, Shri S.K. Mukherji, Secretary, Ministry of Agriculture has also addressed a letter to all the Chief Secretaries of the States He has requested the States to make all out efforts to ensure the success of "a tree for every child" programme This primarily aims at raising of fruit trees by school children. It will not only get their involvement in the planting of trees but also provide nutritional benefit.

Central Assistance to Voluntary Organisations for Eye Camps

The National Programme for Control of Blindness is one of the important components of the 20-Point Programme initiated by the Prime Minister One of the important acitvities under the Programme is to encourage voluntary organisations for conducting Eye camps in rural areas

Financial assistance to these is given by the Central Government In order to avoid delay and to ensure qualitative work, it has now been decided that from 1st September 1982, State/U.T Governments concerned will release this assistance to the voluntary organisations for the holding of eye camps and intra-ocular operations performed in accordance with the prescribed terms and conditions. The amount would be reimbursed by the Central Government as part of the central assistance in respect of the National Programme for Control of Blindness.

To facilitate expeditious settlement of their claims, the voluntary organisations are advised to submit their claims for the eye camps organised by them after 31st August, 1982 to the Health Secretary of the State Government concerned.

Family Planning Services in Assam

Shri V. Natarajan, Adviser to the Governor of Assam, has stated that the Government was trying to make an optimum use of the existing resources so that the family planning services could be made available to the people at their door-steps. Shri Natarajan, who was addressing a seminar on family planning at Dispur, Gauhati disclosed that under the Minimum Needs Programme, 210 sub-centres and 2 primary health centres would be set up during 1982-83 to provide the infrastructure through which facilities for health care and family planning would be made available to the people in rural areas.

Action Plan for Chemical and Fertilizer Units

Shri Vasant Sathe, Minister of Chemicals and Fertilizers, has emphasized on the need to step up production and productivity in the public sector units under the control of his ministry. The financial management of the units also needs to be stepped up, he added while addressing the chief executive of public undertakings in the Chemicals and Fertilizers Ministry in New Delhi

He said that a time-bound plan of action based on result-oriented approach should be immediately drawn up by the undertakings. The production strategy should include short-term and long-term approach.

The Minister of State for Chemicals & Fertilizers, Shri Ramachndra Rath, called upon the units to pay adequate attention to workers and management relations and increased utilisation of capacity as this was essential in the present year which has been declared as the 'Year of Productivity'.

National Fisheries Development Corporation

The Task Force on Marine Products has suggested that a Fisheries Development Corporation should be set up at the national level in the Public Sector. This Corporation should be entrusted with the responsibility of building up a fleet of deep-sea vessels. It should organise processing and marketing of deep-sea marine resources primarily for exports.

According to the Report, in 1981-82, the exports of marine products had reached an all time high of Rs 286 crores and this trend continued in 1982-83 also when the exports of April-August, 1982 reached Rs. 141.5 crores as against Rs. 110 crores in the corresponding 5 months in 1981-82. With this trend, the current year's target of Rs. 315 crores would be reached.

Taj Museum

A new museum, called the Taj Museum, has been set up in the Naqqar Khana of the Taj Mahal Complex, by the Archaeological Survey of India

The Museum, houses the exhibits mostly relevant to the construction of the Taj and the times of its builder, Emperor Shah Jahan.

West Bengal Drainage Schemes Approved

The Planning Commission has approved the lower Saraswati River Improvement Scheme and Motia Mora Metia Khal Drainage Schemes of West Bengal at a total estimated cost of Rs 2.84 crores. The lower Saraswati in Howrah district of the State is about 24 kms long from junction cut channel to its outfall at Sankrail.

Production Targets Public Undertakings Increased

Production targets of all the manufacturing unit under the Department of Industrial Development have been increased by 15 per cent for 1982-83 over the production achieved by them during the year 1981-82 which would result in an average capacity utilisation of 85 per cent.

The Chief Executives have been advised to introduce a system of rewarding good work at various levels and punish those who are responsible for non-fulfilment of targets.

Film Script Awards Competition

The National Film Development Corporation (NFDC) has invited entries for the Third Script Awards Competition.

Three cash prizes with suitable trophies will be awarded including the first prize of Rs 10,000, second prize of Rs 5,000 and third prize of Rs 3,000.

The awards competition has been instituted to encourage good screen play writing. Original scripts as well as adaptation of published works may be entered for the competition. The scripts are to be submitted in English to ensure uniformity of evaluation. The jury will judge the entries on their cinematic qualities and not on their language.

The last date for submission of scripts is December 31, 1982.

New Executive Officer for ASRTU

Shri P. V. Venkatakrishnan till recently Secretary, Planning in Tamil Nadu Government has taken over as Executive Officer of the Association of State Road Transport Undertakings.

The Association of State Road Transport Undertaking is an apex body of 53 State Transport Undertakings catering to about 4 crore passenger everyday through their fleet strength of 77,000 buses. The total capital invested in the State Transport Undertakings as on March 31, 1980 was Rs 1133 crores.

The total number of employees in the State Transport Undertakings as on March 31, 1980 was 5.20 lakh. The traffic staff constitutes 65 per cent, the workshop and maintenance staff 30 per cent and the administrative and other staff 5 per cent.

Industrial Development Undertakings Achieve Over 90 per cent Target

Total production in July 1982 of public sector undertakings under the Department of Industrial Development was valued at Rs 3269.50 lakh being 93.07 per cent of the target of Rs 3512.86 lakhs. This shows an increase of 27.77 per cent over that of July 1981 (Rs 2558.71 lakhs). The monthly production excludes production of Hindustan Salts Ltd. which is engaged in a seasonal industry and whose production is valued at Rs 28.87 lakhs during the month of July 1982.

India made dialyser

The Central Scientific Instruments Organisation (CSIO) Chandigarh, a CSIR laboratory has developed a haemodialysis machine. Such a machine functions as a substitute for kidney and purifies the blood of kidney patients by filtering waste products. The machine which has been developed for the first time in India has been developed for the Post Graduate Institute of Medical Education & Research Chandigarh. It has been tested both under simulated conditions and to human patients. The machine can be used for home dialysis by simplying some of its operations.

Employment Targets for SC/ST Candidates Exceeded in Kerala

Kerala which had a target of creating employment for seven lakh mandays for Scheduled Castes this year has already created 10.322 lakh mandays till the end of August.

The achievement in regard to Scheduled Tribes is even better. The State has provided 1.910 lakh mandays of work to them against the annual target of 50,000 mandays.

Rational Utilisation of Wood Waste

In Soviet Union various steps have been taken for the rational utilisation of waste wood. As a result the production of wood particles and fibre board and larger sheets of plywood has increased. These are made much economical. For instance one cubic metre of wood particle board the making of which consumes 1.5 metres of waste wood serves as a substitute for almost 4 cubic metres of timber. Several board making factories are now being modernised. This will make it possible to increase production by 50 per cent.

Scientists too assist in putting waste wood to useful purposes. New techniques of modifying raw material that make it possible to solidify soft wood and to replace oak or ash tree wood with older has been developed. The timber enterprises process the entire biomass of tree. Their products include tannis extracts, colophony, essential oils and cellular juice. Not less than ninety six per cent of the biomass of trees are utilised. Even small branches and other waste are used to make souvenir articles which are in great demand.

Books

A Practical Guide

PROJECT PLANNING, FINANCING, IMPLEMENTATION AND EVALUTION—with special reference to Agro-industrial projects, by Dr. U. K. Srivastava, published by the Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad, Price Rs. 125.

India is basically an agricultural country. But agriculture in India does not provide employment round the year. A large number of people engaged in it remain without gainful work for many months in a year. Their income also remains very low To reduce unemployment and underemployment in the rural sector and to raise their standard of living, the Government has taken various measures under the Five Year Plans to provide more avenues of employment in the rural sector. One of the steps is the development of Agro-Industries These industries can play a very important role in rural development in general and backward areas in particular, fitting in the scheme for diversification Besides providing employment to rural people, they help increase their income, improve their dietary intake and prevent exodus of people from rural areas to urban areas. Agro-industries also help generate demand for other service institutions, agro-inputs and farm machinery.

Realising their importance Government have announced several incentives and have set up special institutions to provide finance and technical know-how. But most of the people could not avail these incentives due to complicated procedure and various technical matter. Dr. Srivastava has come to their rescue. His book aims at providing entrepreneurs, project analysis and managers interested in agro-industries with practical guidelines. He has made an effort to put together all the case studies and experience, he has gained, during the long years of teaching in the prestigious institute and consulting activities and through interaction with a large group of managers who attended the programmes conducted by the Indian Institute of Management, Ahmedabad. The book has actually grown out of the notes of the author, who has been teaching a course in management of agro-industrial projects. It incorporates author's working experience in the preparation of project reports for potential entrepreneurs and evaluation of projects on behalf of financial institutions. As a result of that the book explicitly recognises the unique characteristics of agro-industries, like seasonality, perishability and variability. Various concepts have been illustrated with case studies drawn from the field. The book has been designed to cover all major tasks of various phases of project cycles. The basic orientation of the book is micro-management of agro-industrial units

The book is divided in four parts. Part I deals with planning of bankable projects and covers the tasks from generating of project ideas to preparation of feasibility reports. Part II relates to the structure of financial institutions, Central and State incentives and financing of agro-industrial projects. Part III covers the implementation of projects both in pre-operation and operational stages, monitoring, control and evaluation. Part IV deals with the aspects of diversification and scanning of environment and opportunities for diversification and expansion. At the end several exhibits (author has used legal language for commonly used term Appendices) have been added which contain information about relevant aspects, like list of industrially backward districts in different States, incentives offered by Central and State Governments, types of activities directly undertaken by various Agro-Industries Corporations, Areas identified under different categories of Agro-industries, Scope for New Entrepreneurs, illustrative product-profiles, All India and State level term lending institutions etc., besides some case studies.

The book would be useful not only to entrepreneurs but also to analysts, bankers and administrators. It will act as a practical guide to them all

S. C. SHARMA

A Challenging Approach

Poverty and Famines—An Essay on Entitlement and Deprivation, by Amartya Sen; published by Oxford University Press, Delhi; pages 257; price Rs. 50.

The main focus of the book is on the causation of starvation in general and of famines in particular. While there is quite a literature on how to 'define' famines, one can hardly diagnose it. The traditional approach to famines that they are caused by a decline in food availability (Food Availability Decline to use Prof. Sen's phrase), according to the author is fundamentally defective, unsound and totally misleading Through case studies of various famines in different parts of the world, the author has convincingly demolished this generally prevailing and accepted concept. He has proved with concrete facts that famines can occur even when there is no exceptional decline in current food availability in the famine-stricken areas. On the other hand, there might be some cases when there was an increase in food availabiliy during the famine period. There may be cases of movement of food out of a famine-stricken area, as it happened in Wollo (Ethiopia) during 1973-74.

The theory also fails to explain why some groups had to starve while others could feed themselves? Why the impact of famine differs from area to area and is not uniform? During the Bengal famine of 1943, people died of starvation in front of well-stocked food shops. This famine, according to Prof. Sen, was essentially a rural phenomenon, urban areas, especially Calcutta, saw it mainly in the form of an influx of rural destitutes. After analysing numerous famines in different parts of the globe, the author concludes: whatever these famines might have been, they were not a Food Availability Decline famines.

Famines imply starvation, but not vice-versa. Starvation is a normal feature in many parts of the world. Famines can strike even when regular starvation is in firm decline. Starvation no doubt implies poverty, but not vice-versa, though starvation is the most telling aspect of poverty. It is possible for poverty to exist, even when no serious starvation occurs. The term starvation and poverty are not unrelated, they are associated with each other but neither concept subhumes the other The idea of poverty being a lack of minimum food and shelter necessary to maintain life, according to the author, is based on a fundamental confusion Poverty, to him, is a matter of deprivation and it has both absolute and relative aspects

As the traditional approach can not provide a true explanation of these situations, a new approach is called for. The author puts forward the Entitlement Approach This approach concentrates on the ability of the people to command food through means available in the society, including the use of production possibilities, trade opportunities and other methods of acquiring food. It views starvation as resulting from a failure of an individual to be entitled to commodity bundle, including enough food A person's entitlement may collapse even without any change in food availability, if for any reason demand for his product/service collapses and he fails to find another job and or social security benefit from the State Viewed from entitlement angle there is nothing extraordinary in the market mechanism taking food away from famine-stricken areas to elsewhere This approach views famines as economic disasters, and not as just food crisis Even the approach that starvation may be due to the shortage of income and purchasing power, offers only a partial picture of entitlement pattern The main advantage of the entitlement approach rests not in simplicity as such, but in providing a more comprehensive account of person's ability to command commodities in general and food in particular

The book has three distinct sections : Chapters I to V are devoted to the tradiional approach, its denounciation and enunciation of entitlement approach Section two contains case studies of famines in different parts of the world; the Great Bengal Famine of 1943, the Ethiopian Famines of 1972-73, the famine of Sahel region of Africa in early 1970's, and the Bangladesh famine of 1974. Section three contains four technical appendices : Analysis of Exchange Entitlement, its failure, poverty measurement and famine mortality in Great Bengal Famine, of 1943.

The book has been undertaken by an eminent economist, Amartya Sen, Drummount Professor of Political Economy, All Souls College, Oxford, for the World Employment Programme of International Labour Organisation. It goes to the credit of the author that he has explained even technical notion in a simple way that an ordinary reader can follow without difficulty.

This thought-provoking book can be of interest to research scholars, administrators as well as to policy makers, as it has certain amount of relevance to matters of practical concern and contains a new approach to the vexing problems of poverty and famines

The book, which is an Indian reprint of an earlier English edition, is moderately priced The detailed bibliography at the end will be of immense help to researchers and serious students of the subject

S. C. Sharma

LAND REFORMS IN BIHAR

Land Records and Agrarian Situation in Bihar : By Dr. M P. Pandey, Naya Prakash, Calcutta 1980, pages 83

The book, containing nine chapters is the report of diverse socio-economic factors and features of land reforms based on the study of land records in Bihar Besides, it surveys the condition of the rural peasantry and agricultural labour. The study undertaken sought to ascertain . causes of non-implementation of land reforms, measures in respect of continuance of semi-feudal situation and developmental-cum-welfare measures taken by the government the ways and means to improve the condition of the weaker sections of the people The writer has acquitted himself quite creditably by devoting one full chapter to methodology and plan of the study without which much of its value would have been lost With regard to land reforms the writer has very reasonably observed, "Land reforms imply not merely passing of self-gratifying statutes and rules thereunder but also appropriate follow-up action (It) appears that not merely in this country but most of he developing countries—land reform measures have not gone much beyond passing fiat or obtaining legislative sanction for the purpose—"(p 31). In the last chapter entitled 'Concluding Observations' the writer has given his findings, pointing out where the shoe actually pinch Apart from a detailed study of records, the writer has attempted to throw light on the condition of the rural masses and agricultural labour, employment situation and potentialities, wages and facilities or disabilities alongwith wage-earning, indebtedness maintenance of land records with the defects having crept into and such weighty matters

The book is certainly a contribution to socio-economic study and its lay-out would serve as a basis for similar studies in other states of India Tables and Annexures are informative enough The book is well-printed and is moderately priced

DR. T C RASTOGI

Small Scale Industries

A Practical Guide to Industrial Entrepreneurs by S. B. Srivastava, published by Sltan Chand & Sons, Daryaganj, New Delhi; 1981, Pages 344; Price Rs. 55.

Dr. S. B. Srivastava, a scholar in applied economics and managerial subject and currently the Deputy Director of Small Industries Development Organisation (SIDO), has written this book that begins from the scratch to cover a wide gamut of issues involved in setting up small scale industries. In a country where emphasis has of late tended to fall on the significance of small scale sector not only on account of its capacity to speed up industrialisation but also because of its ability to subserve self-reliance and entrepreneurship among the job-seekers, whose number has become legion, the book under review is timely and topical as it is intended to benefit a plethora of prospective entrepreneures.

As there exists a positive correlationship between the quality of enrepreneurship in a counry and its socio-economic development, the book makes a marked contribution to the subject by giving exhaustive wrinkles to entreprenuers in respect of the sources of availability of the inputs required for setting up and sustaining small industrial enterprises. The book is divided into two parts—one deals about infrastructure available for industrial growth and the other about the programme of assistance offered by the various agencies.

A painstaking effort is made by the author to incorporate even current trends in the sphere of small scale industrial development and the entrepreneurs who hanker after genuine details on this score would definitely consider this book as an inexpensive but indispensable vade mecum. Particular mention needs to be made of the annexures that follow each chapter, dealing with latest official policy changes in small scale industries. Space devoted to ancillary industries, rural artisans programme, integrated rural development, TRYSEM AND ISB programmes and District Industries Centres (DICs) is yet another useful addition that is likely to find favour with not only entrepreneurs but also academicians and general readers who may be motivated by a desire to know more about the efforts being launched by the Government in promoting small scale industrial culture. The book is a useful addition to the existing literature on the subject.

G SRINIVASAN

(CONTINUED FROM PAGE 24)

Though the National Bio-gas project has been formulated by Govt. of India for the period 1981-1985 and targets have been set up for the entire period, the scheme relating to subsidy, organizational set up, incentives, training programmes etc. have been drawn and sanctioned by the Ministry of Agriculture, Govt of India for one year i e. 1981-82. Even for the 1981-82, the scheme was announced only in November 1981. The practice of formulated schemes relating to subsidy etc. on annual basis have created an air of uncertainty amongst the implementing agencies

Instead of concentrating the scheme in selected districts, it would have been better if the scheme is concentrated in selected talukas of all the districts so that they will have "Demonstration Effect."

AT PRESENT THE implementing agencies have appointed one supervisor for each district. Considering the magnitude of the task to be carried out, it may not be possible for one supervisor to tour the entire district and attend to his functions.

At present the entire subsidy is being distributed by GAIC. Representatives of KVIB and their supervisors say that as a result, there is a time-lag of six months to one year between completion of the plant and sanction of subsidy. They also feel that there is some delay in getting essential inputs like steel and cement from the Nodal Agency.

It is estimated that only about 30 per cent of the population in the State has more than two cattle. Hence family-size bio-gas plants cannot cover the entire population and meet the energy requirements of all. Consequently there is an urgent need to install community bio-gas plants. To reap the benefits of the research, it would be necessary to create a Research Wing in the Bio-gas cell in the Department of Agriculture, Forests and Cooperation, Government of Gujarat. □

Need for Better Storage in Rural Areas

Rao Birendra Singh, Union Minister for Agriculture and Rural Development has emphasised the need for propagating scientific storage in rural areas to avoid loss of foodgrains. The Minister who was inaugurating the two-day Conference of the Chairmen and Managing Directors of the State Warehousing Corporations and the Central Warehousing Corporation in New Delhi recently said that by undertaking this task they will be doing a great service to the nation

REC Assistance to Nigeria and Ghana

The Rural Electrification Corporation (REC) is to assist Nigeria and Ghana in the electrification of their villages and Local Government Headquarters.

In Nigeria, the Corporation will provide consultancy and technical assistance to an engineering firm which has been awarded a contract to electrify 21 local Government Headquarters in that country. The project is expected to be completed within 24 months.

The REC will also provide technical assistance to Ghana in the implementation of its rural development programme which includes village electrification, drinking water and micro-hydel projects.

Under the protocal, various items of equipment, including pumps, conductors, transformers, insulators and drilling rigs of the value of Rs. 5 crores will be supplied to Ghana.

In its bid to provide consultancy and technical assistance to developing countries, the REC has already helped Algeria in the electrification of 400 villages.

As we go ahead with 20-point programme

3

Minimum needs programme

RURAL ROADS are the arteries and veins of the nation The mobility of the entire economy depends on the proper maintenance of these roads In the Fifth Plan, it was proposed to link up all villages with a population of 1500 or more with all weather roads Till the end of March 1981 43,4730 villages were to be connected by all weather roads for which the Sixth Plan has provided Rs 1164 90 crores During the Sixth Plan, all the remaining villages with a population of 1500 and above and by 1990, 50 per cent of the total number of villages with a population of 1000— 15000 would be connected with roads.

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Universal primary health care facilities

ACCORDING to article 47 of the Constitution, improvement of public health is one among the primary duties of the government A strategy of preventive, promotive and curative approach has been adopted by the government This target is ambitious and by 2000 AD, the government proposes to achieve the goal of health for all.

Under the revised Minimum Needs Programme, a trained health guide for every 1000 persons in villages, a sub-centre for every 5000 and a primary health centre for every 30,000 is targetted. A programme for control of leprosy and another for control of preventable blindness will also be implemented

As against the target of 2.35 lakh centres till the end of September 1982, 50,000 primary health centres have been opened

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Spreading education

Right to education is enshrined in the Directive Principles of the State Policy In all the plans, provision has been made for the spread of education According to All India Physical Targets for the year 1982-83, 40 lakh children in the age group 6–14 years are to be enrolled in schools and 55.85 lakh adults are to be made literate

Expanding public distribution system

PRICE CONTROL is a direct measure to keep prices of essential commodities under proper control through the expansion of public distribution system It is proposed to open 305 lakh new fair shops by the end of March 1983 Mobile fruit shops will cater to industrial workers in the rural areas and the student community Now there are 2.98 lakh outlets through which the public distribution system is being operated Of the nearly 3 lakh outlets over two lakh are in rural areas

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As we go ahead with 20-point programme

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THE PLANNING COMMISSION has fixed a target for improvement of living conditions of 21.20 lakh slum dwellers in the country during the current financial year, after consultations with the States. The Central Government has provided Rs. 15 crores for giving incentive grants to States which better their approved targets.

Reports reaching the Planning Commission reveal that four States, i.e., Assam, Bihar, Uttar Pradesh and Pondicherry have achieved more than 25% of their annual target in slum improvement during the first quarter of the current year. Assam, which covered 5,233 slum dwellers out of its annual target of 13,500 topped with 38.8% achievement. Performance of Andhra Pradesh, Haryana, Punjab and Rajasthan has been poor, being less than 20%. Jammu & Kashmir, Himachal Pradesh, Kerala, Manipur, West Bengal, Goa and Sikkim reported no progress at all.

Though the target of providing houses for the Economically Weaker Sections (EWS) in 1983-84 has been increased to over 4.20 lakh units—more than double the target of 2.07 lakhs fixed the last year, the achievement during the first quarter is not commensurate with the enhanced target. HUDCO, which provides loans to the State Governments for EWS housing under the 20-Point Programme, had sanctioned 28,515 units in nine States in these three months. □

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Understanding Gandhian Concept of economy

Yojana Correspondent

To comprehend the Gandhian concept of economy one needs delving rather deeper into things than drawing conclusions from the seamy side of life. For Gandhi human life cannot be divided into separate water tight compartments—religious, moral, political, economic, social, individual and collective. All these aspects of life react upon one another and to Gandhiji these looked intertwined inextricably. A great thinker and reformer as he was he sought all his life some solid basis for an integrated way of life.

Yojana *correspondent, Yunus Siddiqui has done an exercise to put before readers the contents of the Gandhian concept of economy firstly, in Gandhiji's own words, and also as others understood him—yes the stalwarts like Nehru, Kripalani, Gunnar Myrdal, author of the famous* **Asian Drama** *and Bertrand Russel, the great British philosopher.*
Here follows the exercise: **Editor**

Gandhian economy in his own words

"According to me the economic constitution of India, and for that matter of the world, should be such that no one under it should suffer from want of food and clothing. In other words, everybody should be able to get sufficient work to enable him to make the two ends meet. And this ideal can be universally realised only if the means of production of the elementary necessaries of life remains in the control of the masses. They should be freely available to all as God's air and water are or ought to be..... Their monopolisation by any country, nation or group of persons would be unjust. The neglect of this simple principle is the cause of the destitution that we witness today not only in this unhappy land but in other parts of the world too."

On needs of people

"If by advance you mean everyone having plenty to eat and drink and to clothe himself with, enough to keep his mind trained and educated I should be satisfied. But I would not like to pack more stuffs into my belly than I can digest and more things than I can usefully use."

"A certain degree of physical harmony and comfort is necessary, but above a certain level it becomes a hindrance instead of a help. Therefore, the ideal of creating an unlimited number of wants and satisfying them seems to be a delusion and a snare. The satisfaction of one's physical needs, even the intellectual needs of one's narrow self, must come, at a certain point, to a dead stop before it degenerates into physical and intellectual voluptuousness." Further, he says : "Insofar as we have made the modern material craze our goal, so far are we going downhill on the path of progress. That you cannot serve God and mammon is an economic truth of the highest value. We have to make our choice..... I have heard many of our countrymen saying that we will gain

American wealth but avoid its methods. I venture to submit that such an attempt, if made, is foredoomed to failure. We cannot be wise, temperate and furious in a moment."

On degrading pauperism

"No one has ever suggested that grinding pauperism can lead to any thing else than moral degradation. Every human being has the right to life and therefore to find the wherewithal to feed himself and where necessary to clothe and house himself. But for this simple performance we need no assistance from economists or their laws." Gandhiji also held : ".....Nature produces enough for our wants from day-to-day, and if only everybody took enough for himself and nothing more, there would be no pauperism in this world...... But so long as we have got this inequality, so long we are thieving."

On spinning

"Nobody has ever suggested that spinning can be a means of livelihood, except to the very poor. It is intended to restore spinning to its ancient position as a universal industry, auxiliary to agriculture, resorted to by the agriculturist during those months, when agricultural operations are suspended as a matter of course ....." Again he says, "Nobody has suggested that spinning should replace any wage-earning occupation. It has always been regarded as a subsidiary industry."

On capital intensive industry

Whatever the mechanical age may do, it will never give employment to the millions whom the wholesale introduction of power machinery now displaces." Again he says . "A starving man or woman who has the time hanging on his or her hands will be glad to earn an honest anna (paise) during that time."

When Gandhiji was asked, "Are you against large-scale production ?" he replied : "I never said that. The belief is one of the many superstitions about me... . Your question is based upon loose newspaper reports. What I am against is large-scale production of things villagers can produce without difficulty." Again, to a question about his being against machinery, he says : "How can I when I know that even this body is the most delicate machine?..... What I object to is the craze for machinery, not machinery as such. The craze is......for 'labour-saving' machinery. Men go on saving labour till thousands are without work and thrown on open streets to die of starvation." Again he says : "The supreme consideration is man. The machine should not make atrophied the limbs of man." Gandhiji was not against all mechanised big industry. He says : "I do visualise electricity, ship-building, iron-works machine-making and the like existing side by side with village crafts. But the order of precedence will be reversed. Hitherto industrialisation has been so planned as to destroy the villages and the village handicrafts. In the state of future it will subserve the villages and their craft. I do not believe in the socialist belief that the centralisation of the necessities of life will conduce to the common welfare, when centralised industries are planned and owned by the State."

On economics of political power

"To me political power is not an end but one of the means of enabling people to better their condition in every department of life."

(Collected Works of Mahatma Gandhi)

Nehru reacts

"Has our boycott of foreign cloth by khaddar succeeded so remarkably? Has our spinning franchise succeeded ? They have not but you do not hesitate to press them on the country and the Congress because you felt, and rightly, that they would be good for the nation even if they did not wholly succeed."

On khaddar

"I am beginning to think if we are to wait for freedom till khadi becomes universal in India, we shall have to wait till the Greek Kalends. Khadi will grow slowly, and if war comes, it will grow very fast, but I do not see how freedom is coming in its train. As I mentioned before you, our khadi work is almost wholly divorced from politics and our khadi workers are developing a mentality which does not concern itself with anything outside their limited sphere of work. This may be good for the work they do, but little can be expected from them in the political field."

On differences with Gandhiji

"Reading many of your articles in Young India—your autobiography, etc ,—I have often felt how very different my ideals were from yours. And I have felt that you were very hasty in your judgements, or rather having arrived at certain conclusions you were over-eager to justify them by any scrap of evidence you might get."

On influence of Western industrial civilisation

"You misjudge greatly, I think, the civilization of the West and attach too great an importance to its many failings. You have stated somewhere that India has nothing to learn from the West and that she had reached a pinnacle of wisdom in the past. I certainly disagree with this viewpoint and neither think that the so-called Rama Raj was very good in the past, nor do I want it back. I think that Western or rather industrial civilization is bound to conquer India, may be with many changes and adaptations, but none the less, in the main, based on industrialism. You have criticized strongly the many obvious defects of industrialism and hardly paid any attention to its merits. Everybody knows these defects and the utopias and social theories are meant to remove them. It is the opinion of most thinkers in the West that these defects are not due to industrialism as such but to the capitalist system which is based on exploitation of others. I believe you have stated that in your opinion there is no necessary conflict between capital and labour. I think that under the capitalist system, this conflict is unavoidable."

On claims of the poor

"You have advocated very eloquently and forcefully the claims of the daridranarayana—the poor in India. I do believe the remedy you have suggested is very helpful to them and if adopted by them in large numbers will relieve to some extent their misery. But I doubt very much if the fundamental causes of poverty are touched by it. You do not say a word against the semi-feudal zamindari system which prevails in a great part of India or against the capitalist exploitation of both the workers and the consumers."

Allahabad, January 11, 1928

From a photostat letter (Original in Nehru's hand)

On improving conditions of masses

"It seems to me that if we are to improve the condition of the masses, to raise them economically and give them freedom, it is inevitable that vested interests in India will have to give up their special position and many of their privileges. It is inconceivable to me how the masses can rise."

"It is obvious that the devesting is bound to cause loss to the classes or groups which enjoy special privileges at the expense of the masses. It is also obvious that the process of devesting must be as speedy as possible to bring relief to the masses whose condition, as you know, is as bad as it can well be. Indeed economic forces themselves are acting with amazing rapidity today and breaking up the old order. The big zamindari and taluqdari system in the United Provinces (U.P.) has largely collapsed, though it may be kept up for some time longer by outside agencies Even the condition of the zamindars is very bad and the peasantry of course are in a far worse position."

(Nehru's letter to Bapu from Poona, September 13, 1933.)

Gandhi differs with Nehru on economic policy

"The differences between you and me appear to me to be so vast and radical that there seems to be no meeting-ground between us. I can't conceal from you my grief that I should lose a comrade so valiant, so faithful, so able and so honest as you have always been; but in serving a cause, comradeships have got to be sacrificed. The cause must be held superior to all such considerations"

(Bapu's letter to Nehru, January 17, 1928)
(A bunch of old letters)

On eradication of poverty

"Gandhi said on one occasion that it was his supreme ambition to wipe every tear from every eye. That was an ambition beyond even his power to realise, for many millions of eyes have shed tears in India, in Asia and in the rest of the world; and perhaps it may never be possible completely to stop this unending flow of human sorrow. But it is certainly possible for us to lessen human want and misery and suffering; and what are politics and all our arguments worth if we do not have this aim in view."

(Jawaharlal Nehru's address at the University of California, U.S.A. Oct. 31, 1949).

On firmness of Gandhi

"The amazing thing about Gandhi was that he adhered, in the fullest sense, to his ideals and to his conception of truth; yet, he succeeded in moulding and moving enormous masses of human beings. He was not inflexible. He was very much alive to the necessities of the movement and he adapted himself to changing circumstances. But all these adaptations were about secondary matters. In regard to the basic things, he was inflexible and firm as a rock. For him there was no compromise with what he considered evil."

(Nehru's—Foreword to G. D. Tendulkar's Mahatma, Pahalgaon, Kashmir. June 30, 1951).

On big machine

"Perhaps some people might wonder what is the connection between Gandhiji and this great factory (Integral Coach Factory, Perambur, Madras), for he was apparently not enamoured of great factories He thought much more of the village and the home. And yet, I feel that this idea is due to a basic misapprehension. I am quite sure that if it had been our good fortune to have Gandhiji with us today, he would have been glad at the opening of this factory. This factory, like all factories, does not come in the way of his basic desire to develop the village industries and generally raise the standard of our vast rural and urban population. Some people take rather a narrow and lopsided view of Gandhiji. None of us perhaps is fully capable of understanding all the aspects of his many sided character. We cling to one or two aspects not realizing that we do not see the whole of that remarkable personality."........"I shall venture to say that we cannot even maintain our freedom and independence as a nation without the big factory and all that it represents. Nor in my opinion can there by well-being and large scale employment in India, at least for a very considerable period to come, without widespread group of village industries."

(Nehru's Speech at the inauguration of production at the Integral Coach Factory, Perambur, Madras, October 2, 1955).

Acharya Kripalani interprets

"Believing as he did in non-violence, he was of course against the physical liquidation of the capitalists and the zamindars. Yet their exploitation had to end. This he believed could be done if the landlords and the capitalists acted as trustees of the poor. His doctrine of trusteeship has to be properly understood. It works in all spheres of life. The parents act as trustees for the children. The Government acts or should act as a trustee of the people. The representatives of the people in a democracy are the trustees of those who have chosen them as members of a legislature. Even in a dictatorship, the dictator justifies his arbitrary power on the ground that he is the trustee of the people."

"In placing before the nation the programme of khadi and village industry Gandhiji did not systematically work out in the language of the economists all the implications of his scheme. He did not write a learned thesis to prove the need for and the value of decentralised industry in the economy of India, situated as it then was and is very much even now. He did not discuss such profound questions as value, cost of production, demand, supply, etc. Rather he gave simple and homely reasons and example for his new and revolutionary ideas. He talked of the poverty of the masses and their enforced idleness. He emphasized the facts that real India lived in her villages. The idea of labour using as opposed to labour-saving techniques was not evoked out in appropriate technical terms, which only the learned could understand, appreciate and refer to, if need be, in their theoretical discussions."

"To understand Gandhiji's thought the difference between the possible and the ideal must be clearly brought out. It is this confusion of the ideal with the possible that provides a handle to the critics who speak of his being unpractical and utopian. It further makes his legalistic followers rigid and fanatical. He would claim that what he had written or said was practical."

Gunner Myrdal eulogises the logic

A noted advocate of decentralised industry in backward Asian countries, Swedish economist, Dr. Gunner Myrdal in his monumental book ASIAN DRAMA in three volumes, has advocated decentralized industry as best suited for India and other similarly situated countries. He says Indian economy must not follow the Western pattern and should be "job-oriented." "This was the very thing Gandhiji used to talk and which we here (in India) have failed to follow", said J. B. Kripalani.

"With some important qualifications the Gandhian position could be given an intelligible rationale even in a modern context."

"One feature of Gandhi's ideology, his glorification of self-employment—so far as masses of people in the villages were concerned—is still espoused by almost everybody in independent India. In the words of the important Karve Report, "The principle of self-employment is at least as important to a successful democracy, as that of self-government."..."

"Although Gandhi was not unsympathetic toward cooperative methods, he was more disposed to stress the virtues of self-reliant family-based handwork within a self-sufficient village community, and the same was true of others in the mainstream of pre-independence traditionalism."

"Gandhiji's hostility to modern mechanised industry and to urbanisation does not infect the articulate classes who live in Independent India with its five-year plans and its hope of industrialising on a large scale except, as we noted for a few stalwarts. Gandhi's less emphasised reluctance, to see machine and modern techniques introduced in the crafts also finds no echo today. Indeed, one purpose of the cooperatives is now seen to be to instruct village artisans in the use of more efficient methods of production and help them acquire modest types of power-driven machines. One group of enthusiasts for village growth has also pushed the Gandhian ideal of village self-sufficiency into the background by urging policies that would make it possible for village artisans to enter a wider market."

"Gandhi seems to have believed firmly that independence in India would be swiftly followed by a social and economic revolution. To him such a revolution was inevitable."......... "Gandhi dreamt of the magnificent government buildings in New Delhi being turned into hospitals for the poor." In the matter of time Gandhi was optimistic "personally I am of opinion that the reform is coming sooner than we expect."

"To Gandhi a radical change in the social and economic order was, indeed, the meaning and essential purpose of overthrowing foreign rule."

"In the final analysis, the expectation that independence would result in a social and economic revolution was based on the modern western thought that when the people acquired the power of the ballot they would not permit a minority to monopolise the country's wealth."

(Asian Drama)

Bertrand Russell praises the philosophy

"In those parts of the world in which industrialism is still young, the possibility of avoiding the horrors we have experienced still exists. India, for example, is traditionally a land of village communities. It would be a tragedy if this traditional way of life were to be suddenly and violently exchanged for the greater evils of urban industrialism.......The rivers of the Himalayas should provide all the hydro-electric power that is needed for the gradual mechanisation of the village industries of India and for immeasurable improvement of physical well-being, without either the obvious disaster of industrial slump or the more subtle loss and degradation which results when age-old traditions are too rudely broken." ☐

Twenty-five years of science policy in India

Akshay Saraf

Science Policy Resolution was adopted 25 years ago. Since it is the sheet anchor of our development efforts, it is necessary to examine critically the working of this Policy. The author, in this article, asserts that whatever be the achievements, there should be no room for complacency.

TWENTY-FIVE YEARS have passed since India adopted the Science Policy Resolution in March 1958. It is high time we look into the balance sheet of working out this policy since it is the sheet anchor of our development efforts. The exercise does show several brilliant achievements although it is necessary also to consider what further should be done to accelerate the pace of promoting science and technology in the country, particularly to create a scientific temper among the people that of late has been engaging the attention of the leaders and authorities from the Prime Minister downward.

Science and technology had been recognised as a major force for economic and social change in India right since Independence. As Pt. Nehru, the architect of modern India, had once said, "It is science alone that can solve the problems of hunger and poverty, of insanitation and illiteracy, of superstition, of vast resources running to waste, of a rich country inhabited by starving people."

Consequently the Science Policy Resolution of 1958 had underscored among its objectives, "to foster, promote and sustain, by all appropriate means, the cultivation of science and scientific research, in all its pure, applied and educational aspects; to ensure an adequate supply, within the country of research scientists of the highest quality, and to recognise their work as an important component of the strength of the nation........"

Third largest sci-tech manpower

Following that policy, today we have the third largest scientific and technological manpower in the world, nearly 2.5 millions of them. In order to develop modern science and technology, substantial resources and facilities were provided. The educational opportunities in science and technology as well as research institutions multiplied rapidly. More than 100 new universities and institutions of higher learning and 2,500 colleges were established in the past three decades and more are being added. India now has 107 universities, 10 institutions deemed as universities, 67 colleges, including five institutes of technology, offering advanced courses in engineering, and 108 medical colleges. These annually produce nearly one lakh graduates in general science, 4,000 in agriculture, 13,000 in engineering and 12,000 medicos. About 10 per cent of them go in for post-graduate courses. Of the post-graduates less than 10 per cent end up with the Ph. Ds In medical sciences, however, nearly 25 per cent opt for the advanced courses These institutions have increased the scientific and technical manpower in India by over twelve times by now from about two lakhs in 1950.

Besides, there are about sixty national laboratories engaged in research on wide range of specific disciplines in addition to a few general purpose laboratories where under a single roof facilities in many disciplines are provided so that some important projects which require expertise in different fields and necessitate group working, can be conducted there successfully. Moreover, such general-purpose labs located in different zones of the country help in providing scientific know-how for the over-all development of those zones.

Another indicator of the deep interest of the government in making science as an instrument of development is the vast increase in the funds allotted for that purpose which have jumped from about rupees twenty crores during 1951-1956 to Rs. 1380 crores during Fifth Plan to Rs. 3397 crores during the Sixth Five-Year Plan.

Encomiums for our scientists

The achievements of Indian scientists in the field of agriculture had won acclaim all over the world. Achievements in space and nuclear sciences had also been commendable. There are sprawling industrial complexes producing a wide range of capital and consumer goods which had been made possible by large number of research labs under Council of Scientific and Industrial Research set up in 1942. This network of labs covers a wide spectrum of science, technology, engineering and biochemical sciences. Homi Bhabha's vision of nuclear energy and advanced research in fundamental areas of science had found realisation in the Tata Institute of Fundamental Research. The Atomic Energy Commission had grown into a dynamic area of Indian science. Achievements in defence science had also been something to speak of creditably.

Despite this brilliant work done which can not be minimised even by detractors, we can not afford to be complacent as the task of scientific research is practically unlimited and there are ever new challenges.

It is, therefore, essential that we also look into where we may be still wanting or where some correctives need be appl ed or where we could do better and more.

Guidelines

In recent months there have been ideas galore on the important subject. There have been gatherings of eminent scientists to take stock of the 25 years of working of Science Policy Resolution. It was also keeping in view this fact that there was a feeling that some new guidelines will be given at the 70th Session of the Indian Science Congress held last January. The Prime Minister Mrs. Gandhi sensing it had, while inaugurating that session, spelt out concrete steps to be taken to give further impetus to science in the country and to make it yield still better results for the nation. The guidelines may be summed up thus :

* To attain technology competence and self-reliance to reduce vulnerability, particularly in strategic and critical areas, making the maximum use of indigenous resources.

* Provide the maximum gainful and satisfying employment to all strata of society, with emphasis on the employment of women and weaker sections of society.

*Use traditional skills and capabilities, making them commercially competitive.

* Ensuring the correct mix between the mass production technologies and production by the masses.

* Ensure maximum development with minimum capital outlay.

* Identify obsolescence of technology in use and arrange modernisation of both equipment and technology.

* Develop techniques which are internationally competitive, particularly with export potential.

* Improve production speedily through greater efficiency and fuller utilisation of existing capabilities and enhance quality and reliability of performance and output.

* Reduce demands on energy, particularly energy from the non-renewable resources.

* Ensure harmony with the environment, preserve the ecological balance, and improve the quality of habitat.

*Recycle waste material and make full use of by-products.

* Fiscal incentives to promote inventions, to increase the use of indigenous technology, to enhance in-house R&D in industry.

* To absorb and adapt imported technology.

* There will be a mix of indigenous and imported technologies. However, acquisition from outside will not be at the expense of national interest.

These points do take into consideration a large number of problems which had been exercising the minds of all thinking people. Yet, however, as Mrs. Gandhi herself pointed out on this very occasion, India's problems had grown in number and complexity, we should consider some other problems as well.

Two of these more pressing problems as underscored again by the Prime Minister are that scientists have not been sufficiently enthused for the needs of the average people and that we must rid ourselves of the colonial hangover of looking to the west for model.

Brain drain

Another significant problem causing concern to all and sundry is that of brain drain. A notable success has been achieved in persuading Indian scientific and technical personnel who have gone abroad, to contribute to the development of their own motherland. This is good but I personally think that this aspect of the problem had been too much over-emphasised as to become an obsession. To me the correct policy in this behalf had been convincingly and succinctly underlined by Mrs. Gandhi very recently while giving away Sanjay Gandhi Memorial Science Awards when she referring to the problem of brain drain had said, "there is lot of talk about brain drain but very little was said about the great brains that were dedicated to the service of the country." This policy ought to be put into practice without more bother about brain drain. We must see to it that scientists within the country who may be unemployed get employed, those who go to other professions either to seek employment or better opportunities should be persuaded to devote themselves to scientific pursuits and those who do worthwhile work in science should be suitably honoured and rewarded. I am sure if it is done, it will induce those who had gone outside to return. Anyhow, even if they do not return there is no harm.

Funding research organisations

Another problem facing our research organisations is funding them properly and their administration. In that behalf Prof. C. N. R. Rao, a scientific advisor to the Union Cabinet has stressed that growth of science in the country would suffer irreparably if "bold choices" were not made now as to the manner of administering and funding the scientific research. Referring to the new and exciting areas of research which often gave rise to technological revolutions, he had said that funding agencies must respond to the challenge of helping the growth of talent in the emerging areas like genetic engineering and support them at the crucial time. Dwelling on the crucial significance of science development in India, Prof. Rao had cogently said that India was making a special point in the world of science that excellence in science and technology was not a whiteman's monopoly. He had, however, stressed the greater need for exposure of Indian scientists to the scientific work being carried out in other parts of the world and pleaded that funding for it should be made part of the support for scientific work

Another aspect of the problem is the application of the management expertise to scientific affairs. As stressed in a conference of top Indian managers recently, "the professionally managed firms can provide the impetus to the country to jump the chasm between an agriculture-dominated society, which India still is, and an industry-dominated one. There is need for the principles of management to become warp and woof of our industrial philosophy."

It is, therefore, desirable that courses on management are included at some suitable stage in the scientific and technological education at higher levels. At the moment, however, none of the three Institutes of Management in India is said to have developed the capability in the area of management of research in and development management of technology. It is high time that serious attention is paid in this behalf, too.

Common Man

It is unfortunate that scientists in India do not take into account common man, particularly the ruralites. As pointed out above even Mrs. Gandhi had to say that scientists do not seem enthused about common man. Besides making the scientific research elitist, this precipitates many other problems, too, as stressed by Prof. P N. Haksar, former Principal Secretary to the Prime Minister, at the seminar recently on "25 Years of Science Policy Resolution." He had blamed the scientists for not being sufficiently aware of the society around them. He said that the frustration of the scientists grew out of their inability and refusal to understand and analyse the society in which they lived. This led to brain drain, too, he maintained. He said that none could deny that India of 1983 was "very different" from that of 1947, but pointed out that there were pressing problems of increasing population, employment for them, their purchasing power. He also pointed out the hiatus between scientific research and rural countryside.

While it is a fact that taking research to villages is of crucial importance in India, it must be pointed out that some headway has definitely been made in that direction, too and now not only Indian Council of Agricultural Research but the labs under CSIR are also taking increasing interest in this behalf. According to a recent reply in Rajya Sabha by Mr. Shivraj Patil, Minister of State for Science and Technology, a preliminary survey had revealved that upto the beginning of 1980, of the 700 rural development projects being implemented in India 400 had science and technology inputs.

One could conclude this assessment of "25 Years of Science Policy Resolution" with the assertion that achievements should not be minimised but we should not be complacent and must consider and solve the problems to accelerate the pace of scientific progress. □

Malaria
Do You Know That

in 1982 the incidence of malaria in India declined to 28 lakh cases. The Government has allocated Rs.111 crores for antimalarial activities during 1982-83.

the Health Ministry of the Government of India has sanctioned 14 new research projects for control and eradication of malaria.

above 190 crores of people forming 40 per cent of the humanity, living in 102 countries, are at risk from malaria today.

anopheles mosquito which transmits malaria has become resistant to pesticides and the malaria parasite, plasmodium falciparum has become resistant to most anti-malarial drugs.

new drugs such as tetracyclines and combinations of sulfamides with pyrimethamine such as Fansidar are now available for treatment of malaria. But P. Falciparum is becoming resistant to them too.

two new drugs, Mefloquine and Qinghaosu, are under development by UN agencies.

research aimed at developing a vaccine against malaria is also progressing. □

Nehru and rural development

R. A. Purushothaman

The author has covered in this article the thinking of Jawaharlal Nehru over the ways and means of developing Indian economy, and political set up. How deeply Nehru wanted to plant the seeds of democracy and socio-economic structure is explained in this article.

THE BARDOLI SATYAGRAHA and Champaran Agrarian movement in 1920 opened Pandit Nehru's perceptive mind to the explosive rural situation and the real issues of India. He considered Rural Development the only basis for national development Nehru perceived some of the wider and deeper social and psychological forces that have influenced the people. He desired that a kind of educative spade work through planning is necessary. Planning was to a limit 'acquisitive factor' in the society and remove many of the barriers to growth, raise the standard of living and expand opportunities for growth

When Nehru re-aligned his sights towards the consequences of planning. he struck to cooperation in the sense of a plan for a "Cooperative Commonwealth" and launching of "panchayathi raj", different from that of Mahathma Gandhi's design. The whole approach was for a living structure of society to be built up on the principle of democracy.

Nehru stood strongly in favour of rapid industrialisation to remove poverty with the help of modern technology. Through Cooperative Commonwealth he thought that the last man on the rung of the ladder will receive first consideration. His idea of panchayati raj was that it would give a democratic stimulus conductive to the common good of the lowest rung of the rural society.

Nehru was very clear and convinced that for improvement of agriculture and rural development it was absolutely essential to develop basic industries It was the development of the oil industry that helped to produce fertilisers on a large scale. He was all for tractors and big machinery. He was sure that however rapid may be the growth of heavy industries a vast field will remain open to small and cottage industries that will be conducive for rural development. The increasing use of electric power facilitates the small industries and make it economically capable of competing with large scale industry. The problem of scarcity of capital and abundance of labour could be tackled, in his opinion, through the use of machinery, primarily for absorbing labour. When Nehru described it he kept in mind the change in the status and conditions of life of the peasant with the thinking of "the poor peasant in human terms" and to produce "a spirit of self-reliance" in him. He felt that industrialisation would open huge employment opportunities for the rural masses. He said that agriculture has been carried on for thousand years in India and the soil has been exploited to the utmost. Hence rapid industrialisation is essential to relieve the pressure on land, to combat poverty and raise standards of living. He was also quiet aware of the psychological and biological dangers of loss of contact with the soil as a result of industrialisation So also the necessity of going back to the soil and the village for human survial. But he was clear that science has made it possible for populations to be spread out and remain near the soil and yet enjoy all the amenities of modern civilisation and culture.

Cooperation and rural development

Nehru held, that there are three essentials for an Indian village, namely a cooperative, a panchayat and a school. The cooperative was to deal with the economic affairs of the village area. He desired that various economic activities to be organised on a cooperative basis for making it possible for all to be engaged in constructive work programmes and to benefit from their joint efforts, which he called building up of a cooperative commonwealth.

Nehru viewed that the agricultural improvement depends largely on the use of cooperative method. Each peasant gets greater resources from the cooperative organisation and it is easier for him to link agriculture with animal husbandry and small scale industry. An integrated programme of improvements in agricultural sector depends on the progress of cooperation.

There should be positive correlation of a high degree between agricultural production and employment. Nehru felt the absence of this correlation will result in an imbalance in the society. This demands the introduction of cooperative principles in all sectors of national economy which will result in the reduction of disparties of income and wealth.

Nehru's ideology of progress through cooperative methods were institutionalised through the service cooperatives established in every village and the cooperative farming attempted in our rural economy. He favoured industrial cooperatives for the village industrial development. He said "My outlook is to convulse India with the cooperative movement or rather with cooperation to make it, broadly specify the basic activity of India in every village".

Panchayathi raj and rural development

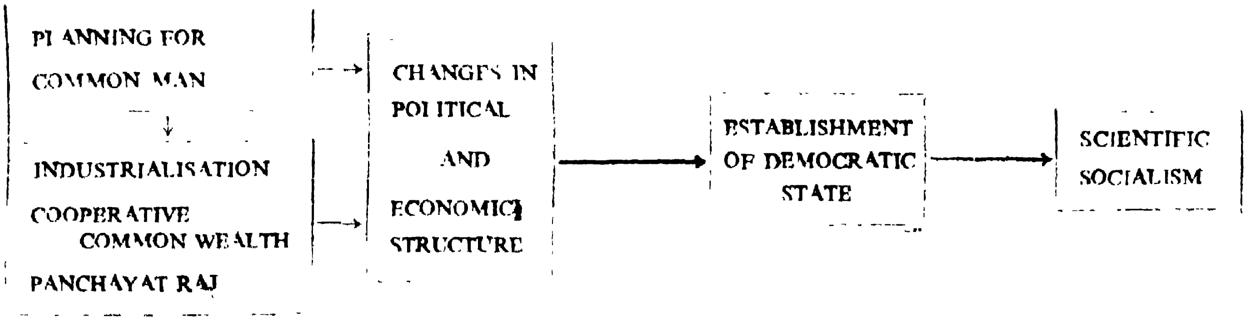
Pandit Nehru considered that the community development projects are of vital importance to make the individual a builder of his own village centre. Panchayathi raj village self-government—Nehru says, has been existing in the country as it could be seen from the Shankracharya's Nitisara—the science of polity. The break-up of it began under British rule in India. He held that Panchayathi raj is a solid foundation of democracy in the country and a powerful instrument not only in the political but also in the social and economic fields. It is decentralisation of power making every village a republic by itself and Nehru said, "Democracy at the top cannot be a success unless it is built on this foundation from below". This development of panchayathi raj bringing with it the transfer of authority and responsibility is a revolution in the direction of democratic decentralisation. Nehru, understood that there could be million mistakes in the functioning but what he felt important was that the villagers will become more self-confident and self-reliant which will give them a new life. This really meant to him "Changing rural society".

Panchayathi raj envisaged the entire work of the community development through the agencies of panchayats to make it a truly people's programme on one side and for greater strengthening of the institution of panchayats itself on the other. Production programmes, budgeting of finance channelising government assistance, building up of every type of infrastructure for village needs are broadly the activities of panchayats for community development.

Thus, Pandit Nehru's attempt for rural development centre around the development of panchayathi raj and entrustment of all developmental activities to be administered by it, in the village. The organisation of village volunteer force and defence labour Bank by every Panchayat in the light of Chinese aggression has been an undisputable brain child of Mr. Nehru in furthering the attempts to change the face of rural India.

Conclusion

Nehru's understanding of the rural situation could well be judged from what he has noted in his "Discovery of India". He said, "The peasant in India was not the lord's self. There was plenty of land available and there was no advantage in dispossessing the peasant. Thus in India there was no landlord system, as known in the West, nor was the individual peasant the full owner of his patch of land. Both these concepts were introduced much later by the British with disastrous results". With this basic clear understanding he viewed land reforms and desired for cooperative farming, and collective farming providing scope for small peasant farming. He was convinced that the planning for common man on the whole and by achieving industrialisation, cooperativisation and panchayathi raj administration, changes in the political and economic structure leading to the establishment of Democratic state could be brought. He felt that the only remedy for India's economic probelm which is fully rural oriented, was to fight for a democratic state. His approach of achieving socialisim was to strive for a democratic state from the grass roots of the villages He believed that this approach, for rural development which is no less than the national development, is attaining the 'scientific socialism'. To picture the path laid down by Nehru for development we could see as shown below :



National housing policy

Sunil S. Toye

Prior to the introduction of planning in 1951 *housing for all categories was generally dealt with by the private sector barring a few exceptions. With the introduction of first five year plan* (1951-1956) *mass housing was started, but only for economically poorer sections of the society e.g., industrial workers, slum dwellers and plantation labour. Gradually it has been extended to other sections also.*

THE GROWTH OF HOUSING has unfortunately not kept pace with the growth of population and the growth of industrialisation, particularly in urban areas. The rural survey carried out by Government of India between October 1953 and March 1954 revealed that about 50 per cent of rural houses had about 3 rooms or less for each house with varying sizes.

By the end of the Third five year plan (1961-1966) the investment had increased to Rs. 144 crores However, at the end of the third five year plan and during the fourth five year plan (1966-71) the percentage rate of growth of construction of housing units (on basis of the family of 5 persons) was generally 2.5 p.c. per annum. Whereas the percentage rate of population growth was around 3.5 p.c. per annum. The net gap since then has been steadily increasing. This is revealed by various sample surveys (urban and rural) carried out by various departments of Government of India. Now housing ranks nearly 7th in order of priority in national planning for the obvious reason of shortage of funds.

It was estimated (around 1972) that rural housing alone would cost 20,000 crores at the rate of 3,000 per house for 627 lakhs of housing units (estimated shortage). On a slightly higher basis urban housing In the fourth plan alone would cost 2,700 crores.

All the above figures lead us to the conclusion that the housing demand and supply Phenomenon does not present optimistic picture.

Indentification of the problems

The housing has two categories .

(1) Urban housing, and

(2) The rural housing.

Let us take a broader perspective of the causes, problems of each category of housing.

1. Problems of Urban Housing

(1) The influx of rural folks to the urban areas put tremendous pressure on the urban land mass This naturally increased the demand for housing in the urban areas. Quoting estimates by the United Nations, the number of people in developing countries living in cities and towns of over 20,000 inhabitants would rise from 30 per cent in 1975 to 42 per cent in 2000 A.D. Half will come from rural areas in search of better employment opportunities.

(2) The rapid industrial growth of the urban areas attracts more population towards the cities and thus there is further demand for housing.

(3) Further the problem of urban housing differs from the rural housing problems, that the urban housing projects have to deal with 3 categories of housing.

(a) Low income group housing.

(b) Middle income group housing, and

(c) Higher income group housing

Thus it is clear that the problem of urban housing is of more complex nature and poses many problems pertaining to each group.

(4) Financial assistance for housing given by the Government is very much inadequate.

(5) Shortage of urban land increases the price of land. It ultimately results in increasing the cost of the housing projects.

(6) The problem of shortage of cement is constant in the developing countries.

Problems of rural housing

(1) Financial resources of the rural folk are meagre. So they are unable to make an investment in housing. Housing is always placed on the lowest rung of priority. The growth of rural housing cannot keep pace with the growth of population. Moreover, there is high occupancy rate per dwelling in villages.

(2) Technical know-how available to the villagers regarding the planning, designing and construction of housing is almost negligible. The rural areas are completely cut off from the latest development in building materials and techniques of construction. The growth of villages is haphazard and unplanned. All this give rise to unhealthy environment.

Formulation of national housing policy

Having taken cognizance of the problems of urban and rural housing, some concrete suggestions can be summed up as follows :

(a) The policies must be based on firm commitment to achieve minimum standards of decent living for all people, (b) Housing has to be treated as a national obligation through self-help and planned utilisation of all the building materials resources, technical services and unemployed manpower; (c) Housing should be given top ranking in the five years plan: (d) Housing should be declared an industry and adequate assistance should be provided by Government; (e) Financial assistance from the agencies like World Bank should be sought in order to intensify the housing activity; (f) Ceiling on the urban land should be strictly enforced; (g) Percentage land use for housing be given better priority in the land use proposals by the civic authorities; (h) Efforts should be made to provide employment to rural people in rural areas so as to reduce their influx to urban areas. This will considerably reduce the demand for housing; (i) Self-help combined with the Government assistance is very suitable as far as the rural areas are concerned Because there is no shortage of man power in rural areas; (j) Loans for the purchase of building materials or the construction of houses, should be liberalised. It should be ensured that the loans are utilised only for the construction of houses and not misused; (k) Building research techniques be implemented for optimum use of the space; (l) A better understanding of human settlements problems amongst the peoples of the developing nations should be established; and (m) Efforts should be made to prejudge the futurology projections regarding the Housing demand and supply and steps to implement them be taken quickly. ☐

For More Milk

INDIA IS SELF-SUFFICIENT in foodgrains but in terms of nutrition it is yet to achieve self-sufficiency. Millions of our children are suffering from mal-nutrition. This is due to shortage of protein-rich food in their diet.

Indian efforts to increase production of protein-rich food have to be based on agriculture and the ultimate choice is in increasing milk production through cattle farming where our crop-wastes can be used as cattle feed.

Below Target

The country today produces 35 million tonnes of milk annually against a total requirement of 50 million tonnes. Bulk of the production is from the buffaloes, which contains more fat and less of protein as compared to cow's milk.

Buffaloes take more food than cows. The cost of buffalo milk is comparatively higher even though our buffaloes are among the best in the world.

The country has at present an estimated 20 million buffaloes and 27 million cows. If their population is to be increased to achieve the production target of 50 million tonnes of milk, it will require a corresponding rise in investment in food land and manpower.

High Breed Cows

The National Dairy Research Institute, Karnal in Haryana, has developed two high-breed varieties of cows popularly known as Karanswiss and Karanfries. Under ideal conditions the new breeds can produce about 3,500 to 3,700 litres of milk per lactation.

The two varieties have been developed by artificial insemination of imported semen from Switzerland and Holland with indigenous breeds like Shahiwal, Tharparkar and Red Sindhi.

The level of exotic inheritance is maintained by 50 per cent. The high-breed cattle not only produces more milk but also adapts well to the climatic conditions of the country. Bulls born of such cross breeds are sturdy enough to be good draught animals.

The average daily milk production of the new high breed cow is 9 5 litres a day as against a daily average production of about 5.5 litres for indigenous breeds. Per cow increase in production is about 60 per cent. They generally produce the first calf earlier and also have about 9 lactations in a life time as against about 6 lactations in the case of the local breeds. The cost of maintaining a high breed cow is marginally higher than that of maintaining an indigenous breed ☐

Medical Personal Do You Know That

India has the largest number of medical personnel in the developing world

there are 2,48,712 allopaths 2,33,824 vaids 1,12.638 homeopaths, 28,737 unani practitioners and 18,357 sidha vaids in the country today there are 1,50,388 nurses, 1,14,820 midwives and 8,648 dentists in the country

there are 106 medical colleges, 286 Nurses Training Institutions, 21 nurses colleges and four colleges for post graduate training in nursing

every year, those who successfuly complete the MBBS Course is more than 12,000.

Lagging behind in the utilization of aid

L.U. Khan

Aid-India Consortium was set up in 1958 to streamline the flow of foreign aid from individual countries and institutions in such a way that India's planned economic development was not hampered due to shortage of Capital. Utilization of foreign aid in India has lagged behind the authorization of aid, or in short, aid is usually underutilised.

THE GENESIS of individual as well as institutional foreign aid may be traced back to the second world war when the U.S.A. came in a big way to rehabilitate the war devastated economies of her allies which, incidentally were also her major trading partners. Marshall programme was intiated to bring the economies of Western countries back on the track. Under developed countries were neglected concerning their aid requirements except lending by the U.N. financial institutions like IBRD and IMF which provided help to these capital-hungry nations. In the mid-fiftees almost all the war ravaged countries of the Europe had recovered and these in turn, to some extend dispensed with their responsibilities towards developing nations and provided individual help to them. Till 1958, the flow of aid from the "haves" to havenots" was not streamlined. Consequently the mounting pressure on the balance of payments of developing nations could not be eased. India faced a crisis during the last years of the Second Five Year Plan and in particular in 1957 economic problems had worsened. The pressure on the balance of payments of India was so mounting that the IBRD had to evolve a more rational system of foreign aid to give a leaverage to Indian and similar other economies Keeping in view the large and a priori, increasing requirements of India, IBRD made concerted efforts and consequently the Aid-India Consortium was set up in 1958 with an objective to streamline the flow of foreign aid from individual countries and institutions in such a way that India's planned economic development is not hampered due to shortage of capital Aid India Consortium consists of Austria, Belgium, Canada, Denmark, France, West Germany, Italy, Japan, Netherlands, Norway, Sweden, U.K. and U.S.A. as member-countries and International Bank of Reconstruction and Development (IBRD) and International Development Agency (IDA) as member institutions. At its annual meetings, Aid India Consortium evaluated and assessed performances and requirements of India for its planned economic development.

Loans, not grants

Foreign aid provided by the consortium is either in the form of loan or in the form of grants and in most of the cases loans are advanced by the members of the Consortium. For instance Austria, Belgium, France, Italy have advanced loans rather than grants. Likewise, IBRD and its affiliated institution-IDA the two major contributors have made loans in most of the cases. Norway is an exceptional member-country which has given only grants during the period 1970-71 and 1981-82. Among thirteen member—countries major donors are U.S.A., U.K. Sweden, Netherlands, Canada and Japan which usually have made larger contributions as compared with the other members of the Consortium On the other hand, IBRD and IDA bridges the gap between the contributions made by the member-countries and India's requirements as assessed by the Consortium The consolidated position of aid provided by the members of the Consortium is shown in the following table :

(Rs. crores)

COUNTRY/YEAR	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Austria	1.5	0.7	2.1	2.3	3.2	2.06	2.7	2.3	.	7.9	1.7
Belgium	10.1	3.0	3.6	5.0	6.0	8.1	9.0	9.4	9.5	9.8	..
Canada	58.8	67.0	66.7	70.4	46.8	58.7	70.0	48.1	23.2	31.5	70.7
Denmark			4.2		41.2	2.3	19.6	..	.	.	
France	41.9	24.0	66.1	56.2	67.3	67.1	74.1	5.4			182.0
W. Germany	55.3	55.3	63.3	94.0	115.5	129.9	133.8	196.9	153.0	282.2	215.2
Italy	6.0	6.0	10.1	13.6			5.8			.	.
Japan	24.3	110.1	59.1	96.3	81.3	87.5	68.9	131.6	83.7	50.7	61.6
Netherland	8.8	10.9	15.8	19.9	29.6	87.3	103.5	92.7	85.9	96.5	89.8
Norway	1.3			.	6.0	8.2	10.0		.	.	.
Sweden	18.1	3.7	46.7	32.7	54.3	47.4	48.1	45.4	50.2	111.4	.
U.K.	85.8	99.5	108.8	164.6	115.7	241.4	175.7	228.3	232.9	284.8	.
U.S.A.	280.0	167.2	30.2	22.9	140.2	70.0	93.6	22.8	49.7	114.1	161.8
IBRD	41.3	45.0		54.7	128.8	87.4	281.8	163.4	227.7	203.8	362.2
IDA	125.9	334.5	199.5	436.6	582.5	714.1		711.9	1287.1	420.6	1538.7
Total	**759.1** **(99.6)**	**926.9** **(99.8)**	**676.2** **(100)**	**1069.2** **(91.3)**	**1418.4** **(84.8)**	**1562.0** **(58.8)**	**1099.7** **(85.5)**	**1568.0** **(82.7)**	**2271.5** **(97.3)**	**1613.5** **(86.8)**	**2683.7** **(69.9)**

SOURCE : Government of India : Economic Survey—various issues

Figures in parenthesis show the percentage of external assistance provided by the Consortium.

Foreign aid may be categorised as—(i) project aid|tied aid and (ii) non-project aid|untied aid. The aid provided for the specific projects or purposes is called project|tied aid; while aid for general purposes is termed as non-project|untied aid. The aim of the receiving country has been to ease the pressure on her balance of payments whereas the cause of making tied|untied aid, from the point of view of donor country is to protect her own balance of payments position. Donor countries usually prefer tied aids over untied aids to protect their interest. Paul Streeten has observed, "nearly all bilateral U.S. and over half of bilateral U.K. aid, is wholly or partially tied" to purchases in the donor country and thus the donor country prefer tied aid over untied aid.

Aid under utilised

The process of aid-giving and aid-receiving, involves three stages, viz, pledging, committing and disbursing. Each member country pledges certain quantum of aid keeping in view the requirements of the receiving country, then makes a pledge, which is usually influenced by other member countries. In this manner aid is authorised and, at this stage, divided between project and nonproject aids. The final stage is of disbursement of utilization of aid by the receiving country. In almost all the cases, utilization of foreign aid in India has lagged behind the authorization of aid, or in short, aid is usally under utilized as Streeten has remarked "a Characteristic of Indian aid was the large proportion authorised but not disbursed" To overcome this problem Rao Committee recommended in 1964 that a large proportion of aid should be united But for the slow disbursement, receiving country is more responsible than the donor country as the slow disbursement is mainly on account of (i) inadequate planning, (ii) faulty actions and (iii) failures in aggregate planning.

Myrdal's comments regarding aid to India are note-worthy. He has commented "despite India's mounting difficulties, there are no signs that the rich countries are getting ready to come forward with increased financial aid.. .. . .whether or not India receives more aid, her greater distress will put her under stronger pressure from the Western countries, and particularly the United States, to abandon her efforts to realise a socialist pattern of society". His remark is valid for all the time to come that "My serious criticism of bilateral aid programmes, however, is their suceptibility to political influences, whether overt or otherwise".

Extension programme

The National Dairy Research Institute has now embarked upon a programme of extension. It has adopted 32 villages around Karnal. An integrated approach for production of milk along with crops has been introduced in these villages Shamgarh is one such village.

Situated at a distance of about 10 kilometres from Karnal the Institute adopted the village in 1976. It has a population of 4,300 of which 79 per cent are landless, marginal and small farmers. The extension programmes are being carried out through a chain of dairy cooperatives known as 'Dairy Vikas Kendras'. These Kendras provide infrastructural facilities for milk production and facilities for sale of their products profitably by eliminating the middle man

By 1990, the country's population will be about 800 million. To provide them 200 grams of milk per head daily, 64 million tonnes of milk will be required annually. Thus the country has to increase its milk production by another 30 million tonnes. Even with growing buffalo milk production the country needs an additional 12 million high breed cows to achieve the target This calls for a massive programme of artificial insemination □

French inland waterways : lessons for India

K.M. Balasubramanian

Even though the nature and flow characteristics of rivers and the topography vary greatly between India and France, there are many common factors in the river systems of both these countries. The author, who visited recently important river ports, and inland navigation systems, writes of his impressions in this article.

A 3-WEEK STUDY TOUR to France recently enabling a visit to the following important river ports and inland navigation system afforded to obtain an overall picture of Inland Waterways Development which took place in France over the last few decades; Port de Paris and Inland Navigation in Seine River basin, Inland Waterways Works at Andrezy, Port Antonome de Paris at Limay, River port of Rouen, Port of Lille, Strasbourg, ship-lift inclined plane technique, Lyon, Expose on operation and survey of Rhone River, Avignon, Rhone-Fos Canal system, Port Autonome de Marseilles-Fos, Beziers—visit to a water slope, Bordeaux Port and Nice. This included the latest system of 'Ship-lift inclined plane technique' and the 'water slope technique' which are now making the traditional lock system obsolete. Even though the nature and flow characterisitcs of rivers and the topography vary greatly between India and France, there are many common factors in the river systems of both these countries which need to be studied in depth. The rivers of France are by and large calm with very slow current. Before drawing conclusions which may be relevant for India, it would be worthwhile to see in brief how the waterways have developed in France.

Inland waterways of France

As in India, inland waterways in France occupies a relatively modest position in the demoestic transport network. The navigable waterways in France is about 6500 kms. of which 2000 kms. are fully canalised. In 1982 inland waterways in France transported 10 billion tonne kms. which represented 7.5 per cent of the total traffic in terms of tonne kms. carried. Comparatively railway traffic during 1982 amounted to 58 billion tonne kms. in France. However, compared to India, the share of inland waterways in France is substantial but compared to other European countries, the share is modest. In Netherlands, it was 57 per cent and in Belgium and West Germany, the share of waterways were 19 per cent and 25 per cent respectively. In France the commodities carried by inland waterways include bulk construction materials (25 per cent), farm produce and foodstuffs (24 per cent), petroleum products (17 per cent), coal (19 per cent) and misc. items like fertilizers, chemicals, automobiles etc. (15 per cent). It is thus seen that the important commodity transported is the bulk construction materials. Waterways are mainly used to carry goods for which facilities exist for handling large quantities with reasonable efficiency and least cost. These facilities include liquid pumping, conveyor belts for coal etc. River ports in France are fully equipped with modern gadgets to operate big container ships. However, the recent recession in the world economy has affected adversely the inland waterways transport in France also. The traffic showed a decline in 1982 compared to 1974. The drop in traffic was very significant. From 1974 to 1982, the traffic in construction materials dropped by 44 per cent and in petroleum products this amounted to 39 per cent.

Advantages of I.W.T. are identified in France in the following fields:

(a) low cost.
(b) low energy consumption.
(c) increased activities of sea-ports.
(d) relief of congestion on other modes of transport.
(e) small impact on the environment.

In view of the above factors, France started to provide a very high priority for development of I.W.T. in the Plan.

One of the major factors which influenced the successful development of inland waterways in France was the effort on the part of the Government of France to introduce integrated development of river basins by a single agency. From a study of Rouen river basin, it was found that entrusting the function of integrated development of river basin to a single agency achieved maximum benefits with minimum costs. For example the Campaign Nationale De-Rhone (CNR) is responsible for taking up multi-purpose schemes in Rouen river basin including construction of ports, canals, power houses, protection of environment etc. A distance of 400km. in this river has been developed by this Company (from Lyon to Fos near Marseilla) for navigational purpose. The provision of multi-modal transport facilities near river ports encouraged setting up of industrial estates complexes in and around river ports. All these ports are well connected by railways and roads also.

In the field of latest techniques introduced in France, the technique of 'water-slope' is worth mentioning. Its salient features are indicated below:

In December 1981, the French Ministry of Transport decided, after tender and competition, the construction of a new operational waterslope in place of traditional locks.

The work is under construction at FONSERANNES and will be completed during summer 1983. The difference in level at FONSERANNES is only 13.6 m. which is nearly the lowest value for which the waterslope is cheaper than lock.

It is anticipated that for rise of 50 m. waterslope will cost half the price of locks

Hereunder is a short description of the Fonserannes waterslope. The 272 m. long inclined fluem has a gradient of 5 per cent and the total length of the work reaches 400 m. from upper end to lower end.

The moving wedge of water enables a boat 38.5 m. long 5.5 m. large and 2.2 m deep to travel up and down the water slope. Four to six pleasure boats will be permitted to travel up and down at the same time.

The yearly traffic is anticipated to reach 5000 commercial boats and 12000 pleasure boats (with a peak of 20 per hour during summer time).

The self motoring shield consists of a powered gantry crane pushing a sealing plate.

The design takes into account the experience gained during the 10 years' operation of Nontech Waterslope and the recent progress in motoring heavy loads.

The Indian scenario

The share of inland waterways transport in the total transport in the country is quite negligible. In the emerging energy situation, the role of inland water transport assumed very great importance. In view of this, the National Transport Policy Committee stressed the need to encourage this mode of transport and the Planning Commission incorporated the main recommendations of this Committee in the Sixth Plan Document. Recently the Haldia-Farraka-Allahabad stretch of waterways has been declared as a national waterways. The Central Government will be responsible for development and maintenance of National Waterways. Inland waterways is the cheapest mode of transport for long and short distances provided the points of origin and destination are located on the water front and no transhipment is involved.

The commercial history of India indicates flourishing inland water transport from 17th Century onwards. However, the mechanical propulsion in India started in the year 1823.

The introduction of railways and extension of road network, somewhat hindered the growth of waterways though all the three modes of transport have to supplement each other. However, again with the commencement of the planned economic development of India after Independence, inland water transport has received attention of the government and the various Five Year Plans included schemes for development of this mode of transport. The total navigable waterways in India is estimated at about 15,000 kms. However, only negligible portion of this length has been made navigable in recent years. Even though the DVC left bank main canal system was designed for navigation, nothing has been done in this direction so far. I.W.T. is used only in the eastern region of the country by Central Inland Water Transport Corporation which carries a freight traffic of about 2 mill. tonnes to the north eastern states. Through an investment of about Rs. 35 crores in CIWTC, its carrying capacity is expected to go up to 5 mill. tonnes by end of this Plan. The schemes include acquisition of vessels and modernisation of Rajabagan dockyard.

However, potential for traffic exist in other areas also viz. Narbada river etc.

Lessons to be drawn from the French experience

Development of waterways in an isolated fashion without an integrated development of the river basin is likely to prove to be futile. In France it was seen that along the river route, industrial estates were set up with power plants to supply power. The coal for the power plants are carried by the inland waterways and the finished products from the industrial estates are also carried through the waterways. In some of the major river ports like Ruen, Lyan and Strasbourg, the river ports are provided with multi-modal transport facilities like railways, roads and IWT. It was

(Contd. on page 27)

An oasis in the desert

Navin C. Samaiyar
and Birendra Kr. Chaudhury

An oasis in the desert ! Yes. This is the story, a success story of a rural dairy development project implemented by the joint endeavour of the Dairy Department of the Government of Bihar and the Tata Steel Rural Development Society, sponsored by TISCO, Jamshedpur. It is, perhaps, the only sucessful dairy project in Eastern India with cent per cent bank return.

THE VILLAGES under study (Kolebira region) which are 20 to 30 k.M.s away from Jamshedpur notified area on both the sides of Tata-Saraikela road under the Saraikela Gamharia blocks which come under the Singhbhum district of Bihar State. The Kolabira region suffers from absence of irrigation facilities, erratic distribution of rainfall average 40″ to 45″, eroded and undulating fields, low soil fertility, high level of soil erosion, frequent crop failures, small and marginal land holdings, general shortage of fuel and fodder. All these factors have kept this region most backward.

In this area people of various tribes and castes are residing. Santhal, Bhumij and Bhuia are the three major sects of the tribal community. Besides this, Mahtos are in very good numbers and Kumhar, Surhi, Brahmin, Goldsmith and Lohar also reside in this area. The scheduled tribes constitute 26 percent of the total population. Although the block is very near to Jamshedpur industrial town, the literacy rate is very poor.

Demography

For presenting this paper the investigators have surveyed 50 families and the total population comes to 301, of which male population is 167 which is 55.48 per cent of the total population and female population is 134 which is 44.52 per cent out of the total population surveyed 106 persons are literate of which 2 persons are graduate, three undergraduate and nine are matriculate. The total cattle strength of this area is 733 of which average animal per family comes to 14.66.

Occupation

The people of this area do not have an aptitude for doing service, instead they do prefer doing agriculture and labour work. Only a handful of people work in the industrial belt of Jamshedpur. The cropping pattern is very much monocropping as yet. A majority of working class are under utilised during the lean season and also due to lack of adequate employment and diversification of occupation. The participation of labour force or a working hand is strictly confined to working in other's agriculture field and selling firewood being brought from jungles which are fast depleting. Agriculture pattern is still traditional, age old and primitive available local cottage industries are pottery. Biri making is vanishing fast because of high production cost and low market potentialities besides the highly restrictive state government excise policies which act as restrictive factor to the small units. Exploitation of the home labour force at the hands of the owners of stone crushers is operating in this area. There is an commercial bank in the region as yet, the absence of which have prevented fuelling external money as a primary input for productive avenues and business. It has also abstained the local mass from developing a habit of thriftness.

Since July '80 the dairy project is running very successfully in the area, having good momentary return with practically zero gestation period. It has lured the villagers to come out in extremely good number for taking up this doing project as their primary occupation.

Selection of dairy villages

The dream of white revolution started with Dr B. B. Mukherjee, Dist Dairy Extension Officer, Dairy Extension Unit (Jamshedpur), Government of Bihar who is having enough practical experience to his credit. He started moving in the villages in June 1979 with the sole idea to benefit the rural mass, he selected interior villages. In the beginning he selected two villages Hanthitanr and Dhatkidih and in July '80 the first batch of 20 milch animal (Buffaloes) were given to 20 families and with this started new era of forming an oasis in the desert.

New era of cooperation

Fortunately the Tata Steel Rural Development Society (TSRDS), which is a wing of TISCO, Jamshedpur installed a field centre at Kolabira and adopted 10 villages for raising the general living standard of the people living in this area. The T.S.R.D.S. started development works in the fields of agriculture and crop extension, cottage and village industries, animal husbandry, civil engineering, community, forestry, horticulture, marketing general development and welfare activities—Dairy deptt. Government of Bihar—when Dr. Mukherjee D.D.E.O. Government of Bihar approached the then Hon. Secretary of the Society Dr. S.M. Mehra, Executive Officer, TISCO who became ready for extending all possible helps on behalf of the society for smooth running of the proposed Dairy project. The Bank of India, Circuit House branch, Jamshedpur also became ready for investing bank money on loan for the dairy project after being assured of marketing of milk from Dr. Mehra.

This dairy project scheme materialised with the joint efforts of Bank of India C.H. Branch, Jamshedpur which provided the major finance towards purchase of all the buffaloes. Dairy Development extension deptt. Government of Bihar provided a subsidy of Rs. 1000.

Purchase of each animal to marginal farmers. Rs. 1500/-for SC's and ST's. Contribution of TSRDS to this project—TSRDS which initiated the scheme with one dairy expert, Dr. A. Kumar and provided free veterinary transportation and marketing facilities ensuing prompt payments both to the villageres and the bank. The milk is being purchased by TISCO dairy at the rate of Rs. 3.25 per litre in the milk van twice a day in the morning and evening from Kolabira centre of TSRDS

At present seven Milk Cooperative Societies are functioning smoothly the membership strength of which is 203 and the total number of buffaloes are 329 of which 229 are milch animals and 100 animals are dry animals till Feb., '82. Out of 203 members the S.T. representation is 28 which comes to 13.79 per cent. The S.T. representation is likely to become more in the near future.

Marketing of milk

The milk is purchased by TISCO dairy through TSRDS (which provides transportation only) at Kolabira centre of TSRDS after getting it tested by a milk tester. The milk with minimum 6 per cent fat is only entertained and the milk having less than 6 per cent fat is being rejected. Milk of all the societies are being tested separately. For making the necessary payments to the farmers a dairy assistant is there whose duty is to make payment thrice a month i.e. on every 5th, 15th and 25th of every month. 50 per cent amount is being deposited with the bank and the rest amount is being drawn by the Secretary of each Milk Cooperative Society which is later on distributed among all the members of the respective society.

For this very purpose TSRDS has a rolling fund of Rs. 3 lakhs of its own from which it pays to the Milk Cooperative Societies every ten days and to the Bank once every month while TISCO Dairy pays the price of milk once every three months to TSRDS. The monetary flow has so beautifully been streamlined by TSRDS that the bank recovery is cent per cent with no defaulter. It is perhaps the only bank financed project in India where recovery is 100 per cent.

On the treatment side, every month natural service pregency diagaosis confirmed cases, aborted cases, treatment cases and vaccination cases (F.M.D.) are regularly done. Since there has been no milk tradition previously in this area, artificial insemination and natural service facilities are being done rather slowly with a certain degree of caution

With increase in demand for milk in recent times and the consequent commercialisation of milk production, the population of buffaloes has increased greatly. It signifies that Indian farmers consider buffaloes to be superior milk producers to cattle, wherever the regional topography suited

The prevalent category of cattle owner in this area live close to subsistence level and therefore do not have the necessary working capital to feed their milch animals according to their requirements on the one hand. On the other hand, since their cropping patterns are highly related to the consumption pattern of their households, they are unable to spare sufficient land for growing green fodder. According to the dairy expert of T.S.R.D.S. the price which producers currently get for their milk is unremunerative to attract investments in modern inputs to increase milk production. Insurance companies are providing cattle insurance services and the premiem payable by small and marginal farmers of this area are being subsidised by the government.

Summary

This area has become a holy place for those who wish to start similar dairy project in their respective areas. Many distinguished persons visited this place. Mr. J. R. D. Tata, Chairman TISCO, during his visit to the Kolabira centre complimented this dairy project for the fine work done and desired that per day milk production in this area should go up to 10,000 litres. The T.S.R.S.D. is trying its level best to achieve the new target as early as possible with the active support of the other two parties of this project namely, Dairy Unit of the Government of Bihar and Bank of India. □

Are successful technologies harmful for the environment?

B. K. Roy

It is extremely necessary to consider the outcome of successes of technologies before they are adopted in India either by developing them within the country or purchasing them from vendors who project only the successes without letting you know the consequences following these successes.

THE ENVIRONMENT made up of the layer of air above the surface of the earth and water and soil on the surface of the earth is the habitat of man as it is for all other living things. Like any other living organism man has to depend for his life on his environment. He receives his basic necessities of water, oxygen, food and shelter from it. However, man is not just an animal that requires water, breathes air, gathers food and seeks shelter for living. His demands are more and ever-increasing and by using his intelligence to meet his demands, he draws resources from the environment far in excess of those needed for his physical maintenance. This is freely being done in developed countries and to a lesser extent in developing countries. This extension of the stress on environment by man is a direct consequence of the success of technologies at his command. Developing countries are actively trying to exploit the environment to achieve higher level of living standards, by using the technologies available to them. Achievement of their goal is and will be thus conditioned by their success with the technologies.

Powerful influence

Technologies powerfully amplify the influence of human beings on the environment. Prehistoric man took from the atmosphere oxygen needed only for respiration, whereas a modern man consumes far greater amount of oxygen to support fires, power plants, and industrial and chemical processes. The carbon dioxide produced in the process is said to have altered its concentration in air.

Apart from the amplification of such natural processes in the environment, technology has introduced totally new substances into it. Man-made radio isotopes, a wide array of synthetic materials as plastics, insecticides, herbicides and chemical fertilisers and many other substances have entered the environment and have considerably influenced and altered it. This process is increasing with passage of time.

Great public concern

The collective change in the character of environment produced by human activity has in recent years became a great public concern. The issue besides becoming intense in advanced countries, has became one of global importance. Public interest in recent changes in environment and its degradation has largely been motivated by concern with the resultant assault on the senses and on bodily functions, and to lesser degree on certain economic values. More fundamental is the question of how the deterioration of the environment affects the resources in the environment in which human beings and the human societies depend for their survival. The effects can be in the form of depletion of resources or erosion of their quality or both. Environmental issues however have started influencing a number of economic parameters like international trade practices and growing importance of multinationals.

Something seems to have gone wrong in the relationship between technology and environment. The growing deterioration of all aspects of environment, air, water and soil to name a few important ones, the proliferating problems of urban environment and such other aspects indicate that an urgent lesson regarding distortions in the relationship has to be learnt. Are these problems due to failure of the technologies?

An earlier view was that environment deterioration was due to some relatively minor faults in our technologies—like the lack of adequate scrubbing facilities on smoke stacks, insufficient sewage treatment or absence of fume traps on motor car exhausts. However, there is evidence to show that the deterioration now experienced are not so much due to minor faults but are rather due to major successes in the application of technology.

Success creates problems

A big part of the present day water pollution problem is caused by the success of the sewage disposal technology, wherever it is done, and not due to the inadequacy in it. The present sewage treatment plants are designed to relieve the burden of organic wastes on the self-purifying biological system of surface waters by converting these wastes to inorganic products, supposedly innocuous. The treatment process is successful in achieving this aim. The system creates problems when the inorganic products are themselves reconverted to organic materials by the green plants which participate in the acquatic biological system and thus the initial aim of the treatment process is frustrated.

In modern agricultural practice, large quantities of inorganic fertilisers are being used as major inputs, to replenish the dwindling natural level of plant nutrients in soil. The fertilisers do greatly increase the immediate crop yields, but at the same time the impoverishment of soil organic matter, by altering the physical character of the soil specially porosity of oxygen, sharpely reduces the efficiency by which the added fertiliser is taken up by the crop. As a result, unused nitrogenous fertiliser drains out of soil into lakes and rivers, where it causes overgrowths of green plants resulting in organic pollution of the water. At certain places nitrates are added to the water system by the effluents from sewage treatment plants which add to the problems of plant growths. The net effect is that the self-purifying capacity of a water system like a river or a lake is greatly reduced

Air pollution

The problem of air pollution due to motor car exhaust gas is well known The problem is acute in cities specially in metropolises The problem originates with the production of oxides of nitrogen, sulphur dioxide and carbon monoxide Of these, the problems of oxides of nitrogen and carbon monoxide are mainly due to the design of the engine and those of sulphur dioxide due to the composition of the fuel. Released into air, oxides of nitrogen, after absorption of sunlight, react with waste hydrocarbon fuel to produce the noxious constitutents of 'smog'. This is a direct outcome of the technological improvement in petrol engines namely the development of the modern high compression engines. Such engines operate at higher temperatures than older ones. At these high temperatures, the oxygen and nitrogen of the air are taken into the engine where they tend to combine rapidly and produce oxides of nitrogen. In the air these oxides readily get converted into nitrates and pollute the air. Rain and snow wash these nitrates down to soil or water courses. Thus the emergence of a new and successful technology—the modern petrol engine is responsible for the 'smog' problem and partly for water and land pollution problems. (Sometimes a little sulphur dioxide contamination may also improve the soil quality).

Earlier a boon, now a curse

The modern insecticides and pesticides like the DDT, which were once taken as a great boon to humanity for helping in killing plant insects or disease vectors are now taken as hazards for the environment. DDT has been found to kill birds, fishes and some useful insects and spoiling the environment in the process. Certain properties of DDT like its solubility in liquids, have been found to help in getting it into the food chains. Its persistent nature makes DDT accumulate in living organisms. The net result is one of disturbing the balance of an ecosystem and in certain cases destroying it. The problem seems to have become so enormous that certain countries have banned the use of DDT.

Thus certain environmental pollution cases arise not because of inadequacies but of the very success of technologies in arriving at the goals they are expected to reach. A modern sewage treatment plant causes algal overgrowths and resultant pollution, because it produces nutrients it is designed to do Nitrogenous fertilisers result in drainage of nitrate pollution into streams and lakes only because they succeed in raising the nutrient level of soils. The high compression petrol engines create nitrate pollution because they successfully meet the design criterion that is development of high level of power. Insecticides kill birds, fish and useful insects because they are successful in being absorbed by insects and killing them, a job they are intended to perform.

Chain reaction

An initial choice of a new technology often gives rise to problems as in a chain reaction. Once the technology of the petrol engine became dominated by the aim of achieving high power, tetraethyl load was introduced to smooth out the knock in the high powered cylinder explosions. This resulted in spreading of lead into environment The problem has reached such proportions that a school of thinking has started growing which favours a total ban on using lead in petrol. Choice of internal combustion engine over external combustion engine as a higher power source in automobile has resulted in the production of carbon monoxide. Thus often a highly praised single minded approach to a technological development for immediate purpose leads to a blind alley. Would the situation have remained better in certain respects had the technologies not been successful to this extent ? Probably the answer is 'yes'. But without them man would also have not get the benefits and comforts he has now. The technologies are thus

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A hut under a tree

Mohan Bari

The rural employment and farm forestry play vital role in rural construction work. The author, who has been working in a remote tribal area for over two decades, in this article, has urged the philanthropic organisations, etc. to adopt villages for income generating projects.

THE MANGO PLANT (*Mangifera indica, L.*) is considered to be one of the auspicious plants in Indian culture as there is not a single Hindu ceremony which is being performed in absence of the leaves of this ever green plant. The plant is originally native of India and is familar with the Indian culture prior to Ramayana and Mahabharata. Irrespective of soil types and climatic conditions it is observed throughout the country, on plains as well as in forests, either in cultivated form or in a wild form. A seedling germinates from a thrown-out mango stone, grow luxuriantly and vigorously. The water which it receives during rainy season is adequate for its natural growth.

The mango plant has got prestigious status in Indian culture not because of its delicious fruits or sacred leaves; but its valuable multifarious contribution for a mankind. Its flowers, fruits, seeds, leaves, bark and roots are all useful to cure the different types of diseases and as such the mango may be second to none in Ayurveda. Nutritionally the fruit is very rich and plays vital role in malnutritional problems in a rural area. It promotes various agro-industries and provide rural employment based on fruit preservation. Valuable oil is extracted from the kernals and seeds also serve as a best cattle feed. Within a short period, the best type of timber is obtained from it which acts as a substitute for teak. An old mango plant having deep root system raise up the level of underground water-table of the area and therefore an experienced farmer prefers a spot for digging well nearby old mango tree to procure assured water supply. The mango tree is the only so far proven plant which could minimize the hazard of atmospheric pollution that the entire world is facing as that has threatened the existence of human race.

Application of low cost technology

Inspite of various uses and economical importances, the divine plant has been totally neglected from the point of rural economy and rural reconstruction. In general, naturally grown plant bears fruits of an inferior type and do not stand in commercial market. However, quality fruits fetch fantastic price in local as well as in foreign markets. An application of a low cost technology, based on local resources available, in rural development programme is the need of the present day. A low cost technology like side-grafting technique can be easily applied to upgrade local mango trees into quality mango plants. The unique and unbelieving examples are prevailing nearby the Krishi Vigyan Kendra, Kosbad Hill in Maharashtra where the landless tribal agricultural labourer annually earn Rs. 1.500 to Rs. 2,000 from an upgraded mango tree, planted nearby his hut. The number of such tribal labourers may be meagre but the fact reveals the potentiality of a rainted mango plant in a rural economy.

Even a landless agricultural labourer who has no other propertly than a thatched hut with limited land can plant at least one mango plant, nearby a hut, Without extra care, tree preads or grows over a hut and one can easily earn additional income of Rs. 2,000 per year. Is it a small amount? At the onset of monsoon, one or two pits of 60x60x60 cms. may be dug up close to a hut. Pits are to be properly filled up with compost and fertile soil and two to three mangostones of any variety may be planted in each pit. Rain water will assit in germination and its further growth. Attention may be paid to protect these seedlings from the stray cattle and goats. Without any special precaution, naturally grown plant may attain 15 cms. girth within two years which is a standard size for operating for side grafting. A naturally raised plant possesses well developed and established root system which can easily withstand to any drought or water stress condition. To exploit the well developed root system, the country

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A Case Study

Child beggars in Patna

S.N. Chaudhary

Our readiness to give alms has encouraged beggary. It is hightime that we stopped ensuring prosperity for ourselves in next birth by giving a few coins to beggars. We should try to rehabilitate these unfortunate persons. This requires much more than a few coins, it requires organised effort.

ABOUT TWO-FIFTHS of the country's popula-have been one of giving alms to individuals as they come to our door. It is because of his, that even after passing Bihar Prevention of Beggary Act of 1951, the system is in vogue and we have failed to arouse public opinion against the existence of this pathological state of affair.

Beggars are divided and sub-divided into various groups. Hence child beggary is also divided and sub-divided on various bases. They may be fully or partially, physically and mentally defective, diseased, able bodied, religious minded, employed, semi-employed, or completely unemployed. This classification is neither exhaustive nor complete, because each type of beggar implies several sub-divisions however, it is somewhat helpful in as much as it gives an idea of the complexity of the problem. These child beggars are below the age of fifteen years and roughly constitute about 15 per cent of the country's total beggar population. Hence the child beggary is a more acute and alarming issue and exists both in rural and urban settings and needs national attention.

This problem can only be solved when we have a comprehensive and scientific knowledge of the problem. This can only be possible when we study them empericaily and intensively. From this point of view case studies of 50 such child beggars were prepared in Patna urban area. For that matter a closed as well as an open-ended interview schedule and interview guide was utilised which covered and questions related to their socio-economic background, reasons of becoming beggars, way of life, boarding and lodging problems, sources of entertainment, etc. Such beggars were mostly traced near cinema houses, religious places, railway stations, bus stands and other busy public places. They were from all castes but majority of them were from low and scheduled castes. Some of them had no knowledge of their caste affiliation. Of these 50 beggars 25 were physically sound, 12 were physically handicapped, five were blind and eight were mentally ill. 19 were from villages, 14 had neither of their father nor mother alive, nine had only mother alive, three had only father alive and only 24 children had both their father as well as mother alive. Of these, seven boys had their parents fully or partially physically handicapped and were engaged in the same profession. The children beg only to assist parents in begging. So far as their educational status is concerned, majority of them have never seen any school, although six of them were literate and could write incomplete sentences. Their income varies from person to person.

Part-time beggars

Part time beggars and those who are handicapped earn more than the others. While the average rate of earning in case of former is Rs. 3 to Rs. 5 in case of latter it is below Rs. 3. Besides having begging as the main occupation the part-timers are also engaged in shoe shining, collection of waste papers on roads, sale of newspapers and biscuits in the morning hours, cleaning of private motor vehicles and so on. Those who are physically fit move from station to station, but those who are physically unfit. usually sit at a particular place. Although there is no hard and fast rule among them, they do not like to cross the area of their begging and disturb others. These beggars are also sometimes engaged in selling cinema tickets in blackmarket. Three out of 50 were also pick-pockets. The finding reveals that some of the child beggars are also sexually exploited by so-called sadhus and sardars. They have also such relationship with their friends within the group. Majority of them take their bath once a week. They wear dirty and torn dresses and half of their body is usually naked.

Deprivation in various forms

They are also the victim of malnutrition. Their main food is sattu and maize bread which they obtain from the thelawalas. Those who cook food for themselves and parents also take very unhygienic food. Shelter is a great problem for them particularly during winter and rainy seasons. Most of them have to live on railway platform, bus stand and foot paths. A group of child beggars from a particular bus depot of Patna reported that they have to give a fixed amount to the concerned constable who allows them to take shelter under the shed of a bus depot in the night. The condition of child beggars, who live with their mother, father or parents, is also far from satisfactory. They have constructed very small houses in some of the areas of Patna with roofs only four feet high. They can not stand inside these mud huts. The present drive of state government for beautifying Patna has led to demolition of their houses. Majority of these child beggars smoke bidi, and also consume toddy, tobacco, etc For entertainment they depend on cinema, engage in gambling, playcards etc.

Reasons behind begging

Although the reasons behind begging varies from beggar to beggar, some of the major reasons which we came across were (a) Inability of their parents to maintain them (b) Sudden death of their mother early in their life and maltreatment by their stepmother. (c) Usual beating and torture by their father|uncle in a drunken mood. (d) Lure of a city life. (e) Poor earnings from part-time activities. (f) Lack of educational facilities. (g) Lack of employment opportunities. (h) Physical and mental disability. (j) Physical|mental disability of their nearest kins and responsibility to maintain them and many others The finding in case of immigrated child beggars from villages in the same generation or in the previous generation reveals that because of the loss of agricultural employment in the villages, there has been an increase in the number of beggars both in towns and in the countryside. This is open secret that for several decades the number of landless workers, deprived of subsistence from the land has been steadily increasing. When these landless labour migrate to urban areas, most of them fail to get gainful employment. Hence some of them work as earth-diggers, road-menders, domestic servants, rickshaw pullers, coolies, etc. in the market. Others take to beggary for their survival. Unfortunately children of beggars take to beggary mostly. In response to the question majority of the physically handicapped child-beggars were resigned to their fate. But those children who are physically fit, observed that if any other alternative for maintenance of their disabled parents is provided to them, they can give up beggary

Solution

The problem of these unfortunate child beggars deserves special consideration, sympathy and speedy action. Since it is a socio-economic religious and legal problem, it is high time for government, philanthropic and voluntary organizations, social workers, thinkers, and society as a whole to provide some suitable alternative to them, so that they may be saved from becoming delinquent and criminal. For that matter it is better to rehabilitate and educate them rather than provide relief and punishment to them. If these alternatives are provided to them, this problem of malnutrition, infectious diseases, insanitary living condition, etc. will automatically be removed.

There should be community level approach to start dormitory type residential schools where besides free education, they should be provided free food, health facilities, clothes, and emotional support. They should be given vocational training to make some material goods like, soap, rope, basket, dolls and many others. All this can not work, unless and until a community level approach is made. Similarly we should change the traditional attitude towards beggars that, they should not be turned away from our homes without taking alms. We should not give anything to individual beggars directly. This facilitates beggary. Hence we should donate only to those institutions which will run the centres of their maintenance and rehabilitation. □

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plant is converted into superior one by way of simple technique known as side grafting.

Technique not unknown

The side grafting technique is known to tribals for generations and thus it is not new to them. However, the science is old and the method is new. In the month of August or September, the country plants having minimum 15 cms. girth or above are to be side grafted to convert them into desired variety by using twigs of desired plant. The technique is very simple and can be acquired at any agricultural institute. The grafted branches may start fruiting within three years and it may be a huge tree within eight years when it will not produce less than 1,000 quality fruits per year.

The philanthropic organizations, university students participating in rural development work should adopt the villages considering a family as a unit and launch a massive campaign for the entire village for such income generating, self replicating and long lasting project. It is obvious that "A hut under a Tree" programme may bring the rural economy, rural health, rural hygiene, rural employment, dry and horticulture and social forestry under one umbrella which may inspire or motivate the poorest of the poor to stand on his own feet. □

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necessary—only the evils have to be controlled The job will be much easier in India where the modern technologies have yet to get a firm foothold than in an advanced country. It is extremely necessary to consider the outcome of successes of technologies before they are adopted in India either by developing them within the country or purchasing them from vendors who project only the successes without letting you know the consequences following these successes. These have to be judged against the prevailing local conditions on one hand, and the pressing requirements of the people on the other. For example, should the people be allowed to die of malaria by abandoning, use of DDT because it is a source of pollution ? □

Child development and nutrition

ABOUT TWO-FIFTHS of the country's population of 68 crores are children. They form the most important national resource for human development. Child Welfare and Development has, therefore, been accorded the highest priority in social welfare. The Ministry of Social Welfare is responsible for overall policy and coordination of child development. It, also, implements several social welfare programmes. Child Welfare and Development activities of the Ministry are indicated below :—

National Policy for Children

1. The National Policy for Children adopted by the Government of India in August 1974 describes children as the nation's supremely important asset. It also enjoins that their nurture and solicitude are our responsibility. It provides guidelines to the Ministries|Departments of the Central Government, State Governments and other agencies for an integrated approach to child development.

2. As provided under the Policy, there is a National Children's Board under the presidentship of the Prime Minister to provide a focus and a forum to ensure continuous planning, review and coordination of all the essential services for the children. The National Policy for Children also envisages State|Union Territory Children's Boards. All the States and Union Territories, except Himachal Pradesh and Chandigarh have established such Children's Boards.

National Children's Fund

3. One of the projects that emerged during the observance of the International Year of the Child, 1979 was the constitution of the National Children's Fund to finance activities of the voluntary organisations, to implement programmes for the welfare of children, particularly, of pre-school age. The Fund was constituted on 2 March, 1979 under the Charitable Endowments Act. The corpus of the Fund was created by the donation of a sum of Rupees one lakh from the Ministry of Social Welfare. The income of the Fund is being augmented by donations from the public, corporate bodies, public sector undertakings and sale of IYC Seals. An amount of Rs. 1.07 crore stands credited to the Fund as in December 1982.

Integrated Child Development Services

1. The scheme of Integrated Child Development Services (ICDS) aims at providing a package of supplementary nutrition, immunisation, health check-up, and referral services to children below six years of age and expectant|nursing mothers, non-formal pre-school education to children, and nutrition and health education to women so that every child in the project area could have a reasonable opportunity of survival and develop into a useful member of society. The projects are being taken up in selected Blocks in the most disadvantaged backward rural-tribal areas and urban slums.

2. The programme was taken up on an experimental basis in 33 project areas during 1975-76. The programme was expanded by the addition of 67 projects in 1978-79. 50 projects in 1979-80, 50 projects in 1980-81 and 100 projects in 1981-82 It has been decided to launch 320 additional projects during 1982-83. Location of all these projects has since been finalised in consultation with State Governments|UT's Administration. Of the 620 projects sanctioned. 336 are in rural areas, 190 in tribal areas and 94 in urban slums. Under Point 15 of the New 20-Point Programme, the scheme is being expanded considerably with 380 projects proposed for 1983-84, thereby raising the total number of such projects to 1,000. All these projects will be fully operational by the end of 1984-85 and will provide supplementary nutrition to 60 lakhs children, immunisation to 145 lakhs children and pre-school education to 30 lakhs children

3. The objectives of the scheme are :—

(i) to improve the nutritional and health status of children in the age group of 0—6;

(ii) to lay the foundations for proper psychological, physical and social development of the child;

(iii) to reduce the incidence of mortality, morbidity, malnutrition and school drop-out;

(iv) to achieve effective coordination of policy and implementation amongst the various departments to promote child development; and

(v) to enhance the capability of the mother through proper nutrition and health education and to look after the normal health and nutritional need of the child.

4. The focal point for the delivery of the ICDS package of services is an Anganwadi in every village. The Anganwadi is run by an Anganwadi worker who is invariably a lady from the local community. She is assisted by a helper. The work of Anganwadi workers is supervised by Mukya Sevikas. A Child Development Project Officer (CDPO) is directly in-charge of each ICDS project. Health infrastructure in the project area is strengthened by adding one Medical Officer, Lady Health Visitor and additional Auxiliary Nurse-Midwife to increase the number of Primary Health Sub-Centres to one for a unit of 5,000 population. The expenditure on the additional health infrastructure for projects sanctioned upto 1981-82 was borne by the Ministry of Social Welfare. The expenditure on such infrastructure for projects sanctioned from 1982-83 will be borne by this Ministry for those located in urban slums and by the Ministry of Health and Family Welfare for those located in rural and tribal areas.

5. The scheme places great reliance on the involvement of voluntary agencies, community participation and coordination of efforts of different Ministries|Departments and organisations at all levels. Coordination committees have been set up at Central, State, District and Project levels.

6. By October 1982, 20,152 Anganwadi centres started functioning in 225 projects, from whom detailed monthly progress reports are being received. As per reports received from 17,038 centres, supplementary nutrition was being provided to 10,62,195 children in the age-group 0—6 years and to 2,73,072 expectant and nursing mothers; 5,94,818 children were receiving pre-school education.

7. The All India Institute of Medical Sciences, New Delhi, (AIIMS) and through it, the Medical Colleges, have been associated in the programme for undertaking detailed survey of health and nutritional status of children and mothers, and orientation of medical and para-medical staff in the ICDS concept. Base-line and repeat surveys conducted by the A.I.I.M.S. and Medical Colleges have shown that there has been considerable improvement in the utilisation of supplementary nutrition, Vitamin 'A', Iron and Folic acid and immunisation among all the beneficiaries—pre-school, children and expectant and nursing mothers, thus leading to improvement in their health and nutritional status. Even pre-school child below 3 years of age showed marked improvement in coverage by all these services.

8. According to the existing system, monitoring of health and nutrition aspects, training and orientation of medical and para-medical staff, and periodic surveys and evaluation of ICDS programme are being carried out through medical consultants drawn from the Medical College|local health infrastructure for each ICDS Project. With the expansion of the programme, it has been decided to adopt a new approach for carrying out these activities. According to the new approach, there will be separate consultants for training surveys and research in addition to State Coordinators and Senior Advisers. Each project will have an ICDS Adviser from the District Health Staff, apart from the training of para-medical staff and monitoring of the programmes

9. Taking advantage of the ICDS model, certain State Governments have started similar projects in the State Sector. ☐

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usual to see transportation of automobiles in big barges through the rivers to the sea ports for exports. It is essential to create effective demand for IWT|

Like-wise, in our country also there is need to set up small scale industries or other industrial complexes along the river routes. Setting up of power plants to supply power to these industries wil also generate cola traffic. Introduction of latest handling equipments for container traffic in the river ports to be developed will also give a boost to inland water transport in this country. All this will involve a very substantial investment. However, compared to the low cost per unit and the saving of energy at national level, the inland water transport in this country deserves this substantial investment. Hydrographic studies in major rivers should be undertaken to assess the nevigation potentital and investment level needed to make them navigable.

It may also be mentioned that the 'water-slope' technique may provide an answer in tackling the problem of inland water transport from lower level canals to higher level canals. The Garland Canal project now in the conceptual stage may have to consider incorporation of these latest techniques, since the system of 'locks' is becoming obsolete in modern navigation networks. ☐

CORRIGENDUM

In Yojana issue of November 1—15, 1983, in the article 'Development of Small Scale Industries in Seventh Plan' by S. B. Chavan on page 4, column 2, line three of para 2, the figures "Over Rs. 7,000 crores" may please be read as "Rs. 37,000 crores".

The error is regretted—Editor.

You and your health

Epilepsy: Facts about fits

Dr. M.C. Maheshwari

There are nearly five million people suffering from epilepsy in our country. Wrong beliefs about epilepsy have harmful effect on patients if they are not given timely treatment. Wrong diagnosis has made several patients doomed for ever. In this article, the author has explained facts about fits, the correct diagnosis and the rehabilitation of epileptic patients.

EPILEPSY IS a definite and one of the commonest neurological diseases. Epilepsy occurs in all parts of the world. Epilepsy affects people of all ages and both sexes without any discrimination of caste, colour or creed. The prevalence rate is 4-5 per thousand, and the incidence per year is 0.3 to 0.7 per thousand. The incidence is higher in children. There may be at least five million people with epilepsy in our country. Of these 30,000 to 35,000 are in Delhi.

False beliefs

False beliefs about epilepsy prevail even today in our soiety, both rural and urban, and among educated and uneducated. A large section of our people still believe that epilepsy is caused due to the evil spirit, madness, wickedness, punishment from god and godess etc. Religious rituals are performed, bodily injuries are inflicted and sacred threads are used to let out the evil spirit. People used old torn shoe, onion etc. for controlling fits. Metalic rings and tabiz are used to cure epilepsy. The fact is that there is no truth whatsoever in these assumptions. These do more harm by delaying the treatment, and subsequent poor response to drug besides hardship and cruelty to the patient.

Epilepsy is an electrical discharge of a group of brain cells. When this discharge becomes excessive and recurrent it leads to epilepsy. The manifestations that occur in fit depends upon what part or parts of the brain are involved in the initiation and spread of the electrical discharge. The words epilepsy and seizure should be differentiated. The term epilepsy should not be used until and unless the seizures are two or more. Convulsion is the motor manifestation of epilepsy and is the most apparent evidence. Other manifestations like sensory phenomenon, psychic disturbances, impaired consciousness etc. may not be appreciated by a common man. Fit is a general English word for epilepsy. Fits are of several types, but the common man is usually aware of one type : the most dramatic and frequent one is called grandmal seizure.

Two major groups

Fits are divided into two major groups : primary or idiopathic, and secondary or symptomatic. In the idiopathic type there is no obvious demonstrable cause. Symptomatic epilepsies are secondary to underlying brain lesions like trauma, infection, haemorrhage or tumour. Fit can be induced in any individual by electrical or chemical or physical means. This is not called epilepsy. In the primary epilepsies there is genetically determined low seizure threshold. This means the stimulation which produces seizure in the epileptics will not produce seizure in non-epileptic persons. When stimulation is increased further to a particular level it can produce seizure in non-epileptic persons. Seizure threshold is further lowered in infancy and childhood due to immature brain, and that is why seizures are more frequent in infancy and childhood. Incidence is further increased if the brain growth is retarded. Growth of the brain is rapid in first 2-3 years of life. The rapidly growing brain is more susceptible to diseases. Seizures in infancy may arrest or retard the further brain growth or may cause damage. This may lead to epilepsy in adults, and, therefore, such seizures should be prevented and treated in infancy and childhood. In the symptomatic group, whatever may be the types of lesions, and induce similar cellular changes, resulting in similar outward expression of electrical discharge and epilepsy.

Seizure

The low seizure threshold in primary epilepsies is presumed to be due to biochemical defect on an inherited basis. The mode of inheritance is not clear but the familiar incidence is undisputed in some epilepsies like in febrile convulsions.

A seizure has got three phases : preictal, ictal and postical. For the diagnosis it is not of importance what occurs during the fit. However the importance lies in what happens before or after the fit. It is very useful for the treating doctor to see the fit himself for correct diagnosis. Unfortunately, this happens very rarely. Thus the accuracy of diagnosis completely lies in the hands of the relatives and friends who have witnessed the fit. Therefore, detailed observations and correct descriptions are the whole crux for the correct diagnosis. It may be advisable to refrain from labelling someone epileptic, when you are in doubt or on flimsly and unauthentic grounds. Taking detailed history is time consuming but is worth as the diagnosis entirely depends on it. Once a wrong diagnosis is made the patient is doomed for the whole life. It is estimated that 15 to 20 per cent of the patients referred to special clinics are non-epileptic. Thus one of the major duties of special centres is to take off epilepsy label from non-epileptic patients. This is not always easy and may require at times the help of very advanced technological equipments.

EEG not dependable

After having established the diagnosis of epilepsy one should try to know the type of epilepsy and underlying cause. Clinical description, examination, EEG (Electro-encephalography) and other relevant investigations are necessary. The treating doctor has to decide to what extent the individual patient should be investigated. In the majority of cases the investigations do not help beyond a particular point. EEG may reveal the type of fit and may guide the therepy. However, one should never depend on EEG for making a diagnosis of epilepsy. EEG may be normal in a patient with epilepsy while it may be abnormal in a normal person.

There have been definite advances in the treatment of epilepsy. Many new and effective drugs have been formulated. One should use the appropriate drugs for the different types of epilepsy. Monotherapy (use of a single drug) should be tried first. Regular follow-up is essential to monitor the therapy. Monitoring the flood-drug level is useful in some cases for better management. Regularity and continuous intake of drug is most important. Epilepsy is controlled by drugs but is not cured. However, about 60 per cent may not require drugs for the whole life. Surgical treatment is required for a very small number of cases.

For people with epilepsies, there are some limitations in driving, swimming, cooking and climbing mountains etc. Lot of prejudices exist and society should do something to get rid of these. The persons with epilepsy should be allowed to study, play and work normally. They should be allowed to take family responsibility of married life. Most of the people with epilepsies today have a great chance to lead a reasonably normal life □

(Based on a public lecture at the All India Institute of Medical Sciences, New Delhi.)

PM accords top priority for cleanliness

THE PRIME MINISTER, Smt. Indira Gandhi, has called for cleanliness as the first priority. On the occasion of the Annual General Meeting of All India Council of Mayors held at Ahmedabad recently, the following message was sent by the Prime Minister :—

> "The unprecedented expansion of our cities in the past few decades has brought in its wake innumerable problems of urban planning and development. The proliferation of slums is an ugly aspect of industrial development.
>
> Much damage has already been done through haphazard growth and construction activity. We must think of ways in which our cities can be made more pleasant for their inhabitants and a better reflection of our country's heritage. Cleanliness is the first priority. Citizens must develop a sense of pride in their environment."

PM on preservation of wild life

IN CONNECTION with the Wild Life Week celebrations, Prime Minister, Shrimati Indira Gandhi has said in a message :

> "India's philosophy has always been one of respect for all living creatures, so all life has flourished in our country We have had great numbers and vast variety in our forests and wild life. This lends colour and distinction to the national scene.
>
> Unhappily, pressures of modernisation linked with an unprecedented growth in population have diluted many of those values which we had held sacred The rapid depletion species of animals and plants has been an unfortunate result. As we strive towards reviving the former greatness of our country, it becomes essential to reawaken our regard for living things and to propagate it all over the world. The destruction of any form of life affects the human race itself."

Science & Technology Notes

Treasures from the Deep

While science in India has been soaring upwards to explore the mysteries of space, it has also been delving into the deep sea to conserve the mineral wealth. C.S.I.R. took a step forward in this direction when samples of the metals extracted from the poly-metallic nodules found on the sea-bed were recently presented to the Prime Minister, Shrimati Indira Gandhi, by the CSIR Director-General, Dr. G. S. Sidhu. These samples were of copper, nickel and cobalt, which were extracted by the Regional Research Laboratory at Bhubaneshwar, one of the C.S.I.R. laboratories. The polymetallic nodules are widely distributed in ocean basins at depths, exceeding five kilometres. It is estimated that there are 1.7 to 3 trillion tonnes of such nodules distributed mainly in the Pacific and Indian Ocean basins. In comparison with land-based ores, they contain higher quantities of manganese, nickel, copper and cobalt. The nodules were picked up from the ocean bed for the first time by the R. V. Gavashani, the research vessel of the National Institute of Oceanography at Goa. CSIR has been entrusted by the Department of Ocean Development with the task of exploration and exploitation of polymetallic nodules. Following this, the first exploration of the Indian Ocean for locating the prime deposits of the nodules was completed in less than four months.

CSIR Technology for Manganese Plant

A Pan-Sintering Pilot-Plant for Manganese ore, with a capacity of 50 tonnes per day, has been set up in Andhra Pradesh, based on the process and design-engineering of the Regional Research Laboratory (RRL), Bhubaneswar. The Sinter, produced during the trial runs, has been found to be very well suited for producing ferro-manganese.

A Unit of this plant will be able to utilise 15,000 tonnes a year of manganese ore fines worth about Rs. 60 lakhs, which at present remains unutilised. The plant has been put-up by Ferro Alloys Corporation Ltd., at Shreeramnagar in Andhra Pradesh.

RRL, Bhubaneswar, a CSIR laboratory, had earlier set up an iron ore pansintering plant of 60 tonnes per day at Kalinga Iron Works (an undertaking of the Industrial Corporation of Orissa), Barbil.

The expertise developed by RRL, Bhubaneswar, can be used for setting up bigger sintering plants for utilisation of the ore fines and beneficiated product from low and off-grade ores, thus conserving the mineral resources of the country.

Mini Cement Plants

Designs of a vertical shaft kiln, capable of producing portland cement, have been developed by the Regional Research Laboratory at Jorhat. The kiln is capable of producing cement in three quantities—10, 15 and 20 tonnes per day. For its commercial utilisation, a tripartite agreement has been concluded between the laboratory, the National Research Development Corporation, and Gandhidham-based Ganesh Industrial Service Agency which will offer consultancy for setting up the plants of the desired capacity.

Production of Oxalic Acid

A modified method has been developed by the National Botanical Research Institute at Lucknow for a higher yield of Oxalic Acid from plants. The method consists of the use of a lower concentration of sulphuric acid than that used industrially and steam heating the plant material for recovery of Oxalic Acid.□

(Courtesy : CSIR)

"Sword of Honour" for BHEL

INDIA IS AMONG the 9 countries of the world to bag the coveted international 'Sword of Honour' for safety—the world's highest safety accolade.

In India the sword of honour has been awarded to the Tiruchi plant of State owned Bharat Heavy Electricals Limited by the British Safety Council of U.K. The Council has membership of 85000 throughout the world.

It is a fiercely contested award lending recognition to BHEL as one of the top safest industrial houses in the world. Other countries who have been selected for the top award are Sri Lanka, Jordan, Nigeria, Indonesia, Saudi Arabia, Malaysia, Australia and U.K.

In a letter to BHEL intimating the award, the Director General of British Safety Council, Mr. James Tye says "you have shown a safety awareness and attitude to safety management second to none. This is reflected in the efficiency of your safety system and your consistently low accident statistics".

BHEL's Tiruchi plant has already won nine awards during 1979 to 1982 from the National Safety Council, Chicago of United States for longest accident free periods of more than 3 million hours.

BHEL's performance in the field of Productivity and Exports has also won national recognition. It bagged award for overall productivity performance in heavy engineering group in the country during the Productivity Year 1982 and the best Exporter's award in 1979-80 and top exporter for 1980-81.

Economic Notes

Scheme for additional transmission lines in Bihar

THE PLANNING COMMISSION has approved the additional Sixth Plan Transmission Lines scheme in Bihar.

The scheme envisages construction of 192 Kms. of 220 KV Single Circuit transmission lines on Double Circuit towers from Purnea to Begusarai; 90 Kms. of 220 KV. S|C lines on D|C towers from Begusarai to Muzaffarpur Thermal Power Station; and the stringing of Bodhgaya-Dehri 220 KV 2nd circuit—90 Kms.

It also envisages the extension of two 220 KV line bays at Begusarai and one each at Muzaffarpur, Bodhgaya and Dehri Sub-Stations.

The scheme will cost Rs. 18.34 crores.

Manipur Pine-Apples for Soviet Union

THE MANIPUR GOVERNMENT'S Fruit Preservation Factory in Imphal produced 200 tonnes of fruit products this year, thereby almost tripling its production in 1982-83.

The products of this factory are mainly pine-apple juice, squash, slices, etc.

Arrangements have already been made to export 50 tonnes of pine-apples from Manipur to the Soviet Union.

Piprasi-Pipraghat Embankment Scheme in Bihar

THE PLANNING COMMISSION has approved the Piprasi-Pipraghat Embankment Scheme in Bihar.

The project envisages the construction of retired line in the gap of Piprasi-Pipraghat Embankment from 8.84 km. to 11.06 km.; extension of Spur at 20.05 km. of Piprasi-Pipraghat Embankment—300 M.; construction of Spur at 21 00 km of Piprasi-Pipraghat Embankment and the residual works of Spur at 23.04 Km. of Piprasi-Pipraghat Embankment.

The Project will cost Rs. 1.49 crores and benefit an area of 1,10,000 hectares in Uttar Pradesh and Bihar.

Yeppamana Mine to Produce Gold from April

WORK ON THE development of Rs. 577.43 lakh Yeppamana gold mine at Ramagiri in Anantapur district of Andhra Pradesh is proceeding apace and the mine will start producing gold from April next year. Its annual production of gold amounting to 287 kg. will be worth Rs. 440 lakhs.

Bharat Gold Mines Limited (BGML) had milled more than 16,000 tonnes of ore and produced 593 kg. of gold of the grade of 3.69 grammes per tonne during April-September 1983.

Essay Competition on Cooperation

THE National Council for Cooperative Training, New Delhi, has requested various universities to hold an Essay Competition on Cooperation. The competition is open to the post-graduate and under-graduate students. Maximum of three prizes of the value of Rs. 150|-, Rs. 100|- and Rs. 75|- respectively will be awarded to the first, second and third prize winners. The winners in the essay competition will also be awarded certificates of merit by the Council. The essay should be of 3000 words and can be written in English, Hindi or any regional language.

Inter-collegiate debating competition on cooperation

THE National Council for Cooperative Training, New Delhi has sent to all the universities a scheme of debating competitions on cooperation, sponsored by the Council for the year 1983-84. The debate will be on two levels, at university level and national level and in two languages Hindi and English. At the national level individual prizes of Rs. 1,000, Rs. 750 and Rs. 500 will be awarded to the best contestants. At the university level, three prizes of Rs. 100, Rs. 75 and Rs. 50 will be awarded.

Disability prevention and rehabilitations to be national programme

THE FORMULATION of a national policy covering all categories of physical disabilities like blindness, deafness, orthopaedic handicaps and mental retardation, was recommended at the concluding session of the three-day Seminar of international experts on avoidable disablement in New Delhi recently.

The Seminar was convened by the Union Ministry of Health and Family Welfare, as a part of the global launching of IMPACT, a project promoted by UNDP, WHO and UNICEF for the prevention of avoidable disablement in developing countries.

The Seminar, among other things, recommended that services covering disability prevention and rehabilitation (DPR) should be declared as national programmes, as in the case of blindness. Special functions should be assigned to the concerned Ministries and non-Governmental organisations with the specific mechanisms laid down for inter-Ministerial and inter-agency coordination.

Working Group on Roads

THE PLANNING COMMISSION has set up a 24-Member Working Group on Roads.

The Working Group will review the progress in the development of road network in the Central and State sectors during the Sixth Plan with reference to the relevant targets, and indicate significant deviations together with suitable remedial measures.

It will study the problem of planning and building rural roads taking into account the target of linking 50% of villages with a population of 1000-1500 and all villages with a population of 1500 and above with a link road by 1989-90.

Working group on Shipping

The Planning Commission has set up a 17-Member Working Group on Shipping with the Secretary, Ministry of Shipping & Transport as Chairman.

The Working Group will review the progress in the acquisition and utilisation of Indian Shipping tonnage during the Sixth Plan period with reference to the plan targets indicating the cause of any major deviation from the targets together with required remedial measures.

It will recommend a policy framework for acquisition of shipping tonnage of different descriptions keeping in view the anticipated pattern of foreign trade of the country during the Seventh Five Year Plan and the proportion of foreign trade planned to be carried by Indian vessels.

The Working Group will assess freight carried by costal shipping and tonnage required by coastal shipping.

Success Stories
From Cipher to Surplus

Sri Srikant Redder of Binkadakatti village in Gadag block (Karnataka), went against the suggestions of veterinary doctor and purchased four buffaloes and fed them as his fancy suited. All the buffalloes died of diseases for which he sought no medical attention. Thus he lost Rs. 12,000.

Then the wisdom dawned on him. He approached the Assistant Director of Animal Husbandry and requested for guidance. He was adviced to procure crossbred cows and proceed in a methodical way while expanding his dairy.

Srikant now sells about 20 ltrs. of milk (home defivery) and is the proud owner of 5 cows. Srikant, a science graduate, has an ambition of setting up a really big dairy in his village.

K. R. Prahallada
Field Publicity Officer
DHARWAD

Kisan Kalyan Scheme of Canara Bank

Thanks to the introduction of the "Kisan Kalyan Scheme" adopted by Canara Bank, two Harijan families were adopted on 3-9-83 by the Perambalur Branch of the Bank in Tiruchy District. The families are of Shri T. Perumal and Smt. Kanniammal, a widow, of Sencheri village. Under this pilot scheme all the needs of the families regarding health, education and economic upliftment will be looked after through financial help, guidance and constant contact with the family members at least for a period of three years.

S. Subramanian
Field Publicity Officer
Tiruchirapalli

Land Restored to Jujhar Bhil

Jujhar Bhil, an humble villager of Katler village in Mandsaur district is a happy man now. The reason of his happiness is that he got back his more than one hectare of land again which was fraudulently grabbed by a non-adivasi of the same village. The latter had also got the mutation in his favour.

When a complaint regarding this illegal transfer of land was filed before the District Administration, the matter was investigated and after the formal procedure the Sub-Divisional Officer, Revenue, restored the land to Jujhar Bhil.

It may be recalled that under a recent legislation several advasis have been benefited by restoration of their lands which were fraudulently transferred in the name of non-adivasis.

A dedicated Social Worker

Shri Rokkala Venkata Reddy is an arduous social worker. He has helped in saving the lives of a number of serious patients of G. B. Pant hospital, Port Blair by arranging blood for them. So far he has arranged about 200 bottles of blood for the needy patients. In Andamans there is no Blood Bank.

The exceptional sense of responsibility of Shri Reddy to the Society in saving the lives of a number of helpless patients has set an example of dedication to a humanitarian cause. In recognition of his outstanding contribution, the Lt. Governor's commendation certificate was awarded to Shri Reddy this year on the occasion of Independence Day.

Shri Reddy said that one gets complete satisfaction by serving the helpless and poor. Success does not lie merely in getting more and more material comforts. Indeed, Shri Reddy is an exception.

O. Som
Field Publicity Officer
Port Blair

SQN LDR Rakesh Sharma to be the First Indian Cosmonaut

SQN LDR RAKESH SHARMA of Indian Air Force will be the first Indian to go into space next year. The space mission is likely to take place next April. The flight will last eight days.

The selection of the cosmonaut teams was made by the Governments of the USSR and India for the joint Indo-USSR space mission. The main team will comprise Col. Malyshev, Mission Commander, Sqn Ldr Rakesh Sharma, Researcher Cosmonaut and Mr. Rukavishnikov, engineer. The back-up team will comprise Col. Berezovoi, Mission Commander, Wg Cdr Ravish Malhotra, Researcher Cosmonaut and Mr. Grechko, engineer.

During the flight, the Researcher Cosmonaut will conduct various experiments coming under material sciences, bio-medical sciences and remote sensing. The experiments have been sponsored by various scientific and research organisations and Institute of Aviation Medicine.

Books

Industrial Sickness

How to Diagnose, Prevent and Cure Industrial Sickness By V. S. Kaveri. Published by Sultan Chand & Sons, 23-Daryaganj, New Delhi 110002. First published : 1983. Pages 183. Price Rs. 75.00.

OVER THE YEARS the problem of industrial sickness has assumed gigantic proportions and if it is not tackled effectively, the up and coming class of new entrepreneurs in the country would be demoralised in setting up new ventures. The seriousness of the problem can be gauged from the large number of industrial units lying closed and remaining non-functional, most of them for a number of years.

In the aforesaid context, the present book is quite refreshing as it unfolds not only the various ramifications of sickness in industrial units but also dilates on what could possibly be done. But its weak point lies in the fact that apart from the factual position of what is being done, the author has not given his views on what could be done to solve the problem. This deficiency, however, does not deflect us from the fact that the book contains a mine of information on causes and signs of sickness, preventive measures, curative measures, nursing of sick units and follow-up and recovery procedures.

The provisions and their explanation on various schemes, including mergers and amalgamations, are quite instructive for those who are actually involved. It would have been more useful for readers if some illustrations by way of case studies in detail had been provided so as to unfold the reality in the realm of solving the problem of industrial sickness. This could have given some guidelines for future policy-making and actions. The description of preventive and curative measures is not only adequate but thoroughly meaningful and enlightening. The accent laid on cash flow statements of sick units for generating cash for repayment of term loans is appropriate.

Navin Chandra Joshi

Problems of Small Industries

Problems and Prospects of Small Scale Industries in India by Dr. Vasant Desai, Published by : Himalaya Publishing House, Bombay, Price Rs. 90, Pages 338.

EVEN AFTER 35 YEARS of independence, Indian economy is still dominated by monsoon dependent agriculture which is supporting too many people at subsistence level. Industrial base has not widened to wean away surplus labour from agriculture. In this context, small scale industries have a significant role to play in this country. In a single volume the author has tried to depict the small scale industry with all its ramifications.

The book commences with difficulties any nascent industry has to face in the matter of finance, managerial skill, production, distribution and sales. He has gone at length to describe the handicaps faced by small scale industries. The economic sickness prevalent in small scale industries has been discussed threadbare. The process of revival of sick units has been explained with case studies, which would be of great interest to all concerned.

The concept of providing all infrastructure facilities needed by small scale industries at one place so as to ensure their smooth continued existence from inception by setting up industrial estates has been treated well, shedding new light on the subject.

The author has written a very informative and exhaustive chapter on the role played by small scale industries in promoting our exports with plenty of supporting data, and has given great prominence to it.

The book would have been good enough had he stopped at this stage. But the author has proceeded further, projecting his ideas on the future role small scale industries have to play in developing our economy during eighties with special emphasis on export strategy to be adopted by them. This would provide food for thought for economists concerned with future planning.

In all the chapters the author has added a wealth of statistical data to drive home his points. The book is a nice treatise on small scale industries in a compressed volume without omitting any essential details. The role of the author could be likened to that of a physician. He has analysed the problems faced by the industry in the past, prescribed curative measures and has also completed his diagnosis by suggesting ways and means of developing it in a healthy manner during the difficult days ahead, so that it can play its part fully.

D. P. Rangan

Sketchy, Patchy book on Kamraj

Builders of Modern India : K. Kamaraj—By R. Parthasarathi—Publications Division, Patiala House, New Delhi—110001—Pages 49—Rs. 5.00.

KAMRAJ, who hailed from a poor family of a backward community in a backward district and who was a poorly-educated ordinary Congress Worker rose to positions of Kingmaker, Chief Minister and the President of the Indian National Congress. He later lost his power to a regional party, but, not losing heart, he was reorganising the nationalist forces, when death came suddenly in the shape of a heart attack. Though included in the 'Builders' of Modern India series, he would have preferred to call himself a "Servant" of Mother India.

The author (who has since passed away) was a long-time associate of Kamaraj, and an experienced media-man. One would have naturally expected from him an intimate, interesting, instructive, impartial and detailed biography of the leader. But unfortunately his book nay, booklet, has turned out to be a sketchy, patchy, incoherent, poorly written anecdotage. Apart from repetitions, loose construction and grammatical and printing errors, there are major structural defects in the book, some of which could have been avoided by proper editing. The author is subjective in his treatment of important confrontations as between Rajaji and Satyamurti, Rajaji and Kamaraj, Morarji and Shastri, and Morarji and Indira Gandhi. Without a sense of proportion he mentions that Kamaraj projected his guru Satyamurti on a national level and that G. Rajagopalan, who was just an assistant of Kamaraj, as the latter's 'mentor'. The author's tributes to Kamaraj are at times sentimental and at times, left-handed. Kamaraj is mentioned both as a member and opponent of the 'Syndicate'. The chronological chaos is the worst defect in the book : Shastri dies on page 31, and is elected as Prime Minister on page 39; Kamaraj is suddenly mentioned as the Congress President but his election to that position comes later; Nehru's death is mentioned first and his support to Kamaraj's candidature is described later in the same para. There are significant omissions such as the final Congress split and the parting of ways between Kamaraj and Mrs. Gandhi, the performance of Kamaraj as Chief Minister and the victory of DMK in Tamil Nadu. The author says in his preface, "There may be some commissions (!) in this, but I hope the readers will not mind them but take it (') in the spirit in which it (!) is offered." One may add that the book is full of commissions and omissions.

P. Srinivasan

World Bank on India's Export

India's Export by Martin Wolfe ; Oxford University Press, for the World Bank, 1982 ; pp. 203 including Index pp—109—203 : Bibliography—pp. 183—197 ; Special Indian Price : Rs. 100.00.

WELL-BOUND AND nicely produced, 'India's Export' is a prestigious book dealing with the considerations kept in view by the World Bank for servicing debts to India. It praises India's export performance, her earning foreign exchange, and her ability for the developmental schemes—thus the whole gamut of India's problems centering on export, policy- making etc. has come under the review. India's is a vast economy with potentialities for developing a number of resources still awaiting development. Since exports and imports are inter-related and these continue reacting upon each other the difficulties, foreseen and also unforeseen, arising. Many of these difficulties are born of the fact—to which Prime Minister Indira Gandhi has very recently referred and demanded the World Bank to be controlled by the U.N.O.—that the strings of the World Bank are in the hands of a few powers not always sympathetic to our needs.

Divided into as many as five chapters, the book seeks to throw light on the role of export, characteristics and patterns of growth, major constraints both domestic and external, specific incentives towards developmental policies with arguments, and a host of such matters. But the statistics used refer to the period from 1960/61 to 1978/79 and consequently much of their relevance seems to have become outdated. Despite this time-lag Indian experts may compare notes and can get to real insights into the functioning of the World Bank. The book has academic value too; students of Advanced Economics may benefit from its study.

The World Bank, as evident from the book under review, praises India's efforts for reducing inflation, judicious procurement and distribution of food even during the period of droughts, and her being a credit-worthy nation. Its suggestions for taxation of affluent farmers, price increase in power of coal, and an increased in rate of domestic savings etc. call for close attention and minute scrutiny. During these days of sophisticated electronics and gallopping technology the discipline of Economics too has grown vastly complicated and it goes without saying that the Government of India has been keeping pace with the times and our economy is marching ahead.

The price of the book seems to be a little high especially from the viewpoint that the World Bank possesses vast resources and could have subsidized to bring down its price.

Dr. T. C. Rastogi

Struggle against inequality

Scheduled Castes and the struggle against Inequality; edited by the Jose Kananaikil ; Indian Social Institute ; New Delhi ; pp. 162 ; Rs. 25/-.

THE VOLUME is a well-edited bright and brisk paper-back : contains eight papers on the various aspects of the burning issue of its title.

Indian Social Institute has been eminently ahead of times in its endeavour to ponder over social problems of the country. Research studies, field work and convening workshop on social strategies of topical relevance have been its veritable tools of endeavour.

A pervasive introduction by Jose Kananaikil strikes the keynote of workshop deliberations. The paper by Bhagwan Das gives a threadbare exposition of the historical perspective and the contemporary strategies arising from the national scene from time to time. Others have likewise the distinction of having touched upon unique and hitherto un-explored remifications of the issue, inter alia "marginalisation of scheduled castes—a sociological interpreation" some perspectives on employment of scheduled caste women, "conversion movements" "caste and religious factors".

"The different theoretical perspectives" and the "research findings" which have been skilfully encompassed in the slender volume, will prove very useful to those who are given to implement laws and procedures designed for tackling the overall problem at the Government or social level.

Rashmi Khurana

THE COUNTRY added 600 MW of power generating capacity in the first three months of 1983-84. This was 96.6 per cent of the programme for the quarter. Of this, 490 MWs were from Thermal and 110 MWs from Hydro electric units.

There was, however, a shortfall because of delay in the commissioning of the 15 MW Mukerian Unit 1, the Donkarayi Unit (25 MW), Nagarajuna Right Canal Unit (30 MW) and Jaldhaka Stage II units (8 MW) due to various reasons. The Chandrapur Thermal Unit (210 MW) also faced some delay.

The failure of monsoon in the Southern region also accounted for the marginal shortfall in hydel power generation. However, in spite of all the shortfalls, the power of generation was 11.6 per cent more than the corresponding period in the previous year.

There are 83 micro and small hydel schemes aggregating 140 MW operating in the country. They are largely located in Uttar Pradesh, Himachal Pradesh, Jammu & Kashmir, West Bengal and North Eastern Region. Another 54 schemes with a total of 125 MW capacity are in different stages of construction. Besides these, 13 more micro schemes aggregating 54 MW have also been cleared by the Central Electricity Authority.

The quarter under review also saw electrification of 3674 villages and energisation of 31,462 pumpsets in the country. ☐

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THE GOVERNMENT OF INDIA has allocated an additional outlay of Rs 75 crores to the Ministry of Works and Housing to provide incentive grants for implementation of water supply schemes in the problem villages to those States and Union Territories whose performance exceeds the target fixed under the normal programme. These grants will be distributed in one or two instalments during the current financial year.

The States will be asked to prepare specific projects restricted to the already identified problem villages. Preference will be given to the projects which will benefit Scheduled Castes and Scheduled Tribes. The projects will be limited to 25 per cent to 30 per cent of the approved plan outlays for the year 1983-84. The Ministry of Works and Housing anticipates that the fresh schemes will amount to Rs. 130 crores but the actual expenditure in the current year will not exceed Rs. 75 crores. The spillover expenditure will be met out of the normal programme funds for the year 1984-85.

An official committee will be constituted under the Chairmanship of the Secretary, Works & Housing to evaluate the performance of the States and for determining and releasing the award amounts. The committee will also monitor the progress of the implementation of the schemes.

The supply of drinking water to problem villages has been incorporated in the 20-Point Programme. There were 2.31 lakh problem villages in the country as on April 1, 1980 and the objective is to provide at least one source of safe potable water (available throughout the year) in all these villages by the end of the Sixth Plan. Priority is to be given to the Scheduled Caste and Scheduled Tribe population.

An outlay of Rs. 2007 crores, 1407 crores in the State Sector Minimum Needs Programme (MNP) and Rs. 600 crores under the Centrally sponsored Accelerated Rural Water Supply Programme (ARP) has been provided.

The total expenditure incurred on the rural water supply schemes in 1980-81 was of the order of Rs. 308.41 crores and the number of problem villages covered was 25978. In 1981-82 29837 villages were covered with an expenditure of Rs. 370.27 crores. The revised outlay for 1982-83 is Rs. 410.67 crores and according to the provisional figures 44208 villages were covered during the year. The approved outlay for 1983-84 is Rs 518 01 crores and the target is to cover 48846 villages.

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AMELIORATING THE LOT OF
INDIA'S MILLIONS

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yojana

DECEMBER 1—15, 1983 □ RUPEE ONE

Planning for energy
needs in 2000 AD

NEXT ISSUE

Savings in
rural sector

Lowest per capita expenditure on family planning

INDIA has the lowest per capita family planning budget among the developing countries, barring Thailand. The per capita budget for family planning in India is 0.23 U.S. Dollars as against 0.17 U.S. Dollars in Thailand, 1.24 U.S. Dollars in Mauritius and 1.63 U.S. Dollars in El Salvador.

The expenditure on family planning methods per acceptor in real terms (at 1970-71 constant prices) has progressively come down during the period 1977-78 to 1982-83. The Ministry of Health and Family Welfare has spent Rs. 120 per acceptor in 1977-78 and Rs. 91 in 1982-83. Real expenditure per acceptor in 1982-83 was 24.2 per cent less compared to 1977-78.

It is an accepted fact that population growth and the state of economic development are interconnected. Among 73 countries with low and middle income economies only two countries, namely China and Indonesia, have lower birth growth rate than India. This is in spite of the fact that in per capita income terms, India ranks in ascending order of per capita income among these 73 countries.

The annual increase in population in India is over 13 million, same as for China. India and China have the largest population base, hence the highest population increase Inspite of best efforts and target achievements, India will continue to show perhaps the highest increase in population per year. China has brought down its population growth rate by aggressive family planning methods. The Indian approach is based on voluntary methods and cooperation of the acceptor. ☐

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Caring for India's Millions—land and water aspect

Dhanpat Rai

Development of millions is essentially a multi-dimensional social process concerned with man, as an individual, a society and a nation with basic respect for the worth and dignity of every human being. The author, in this article, says that new vistas offered by science in technology and management resources, can ameliorate the lot of India's teeming millions.

AREA-WISE India is the seventh largest country and demographically the second populous nation in the world. It occupies about 2 per cent of world's area, but about 14 per cent of its population. It integrates varied topography and climate of the lofty Himalayan ranges in the north, ancient Indo-Gangetic plains, the Brahmaputra valley, the Rajasthan desert and the Central plateau extending to the large peninsula in the south. Over three-fourths of its people depend on land, and water to seek their livelihood; their main vocation being agriculture or agro-based industry. Agriculture, in rural India, is generating 95 per cent of gross national product (GNP). The exploding population of this country, over 700 millions, now threatens to reach a staggering figure of a billion by the turn of the century. Food, fibre, fuel, fruits, fodder and forests are essential for human as well as animal consumption. These needs are ever-increasing. The task ahead, to meet these necessities of life, is enormous and challenging. The present yield of 133 million tonnes of foodgrain ought to be, atleast, doubled by the year 2000.

The average rainfall in India is 110 cms. The available water is unevenly distributed because of unequal rainfall in time and space. Water is a basic requirement for human and animal needs, for their very survival as well as for economic development. Considerable quantum of water is required for agriculture and agro-based industries. It is therefore imperative to harness the available water resources and use them most efficiently.

Agriculture since ancient times

Agriculture has all along remained one of the main industries of ancient India, as it is in the modern times. Watering the plants has been one of the chief needs in developing agriculture from time immemorial, even through artificial means. The various irrigation methods invented and developed by the ancients were the result of vast knowledge gathered by experience handed down from one generation to another. This system of distributing water for agricultural use had been well recognised in the early civilised centres such as Egypt, India, Mesopotamia and China. In the Indian sub-continent, the uneven rainfall, its scarcity and excess, at times its failure, made the ancients devise indigenous methods to restrain and regulate the surface flow of streams and rivers.

The prehistoric remains of the Indus Valley indicate the agrarian habits of the people. In an agrarian settlement, a steady supply of surface water is very important. Indus Valley was having seasonal rainfall, elaborate arrangements in these prehistoric settlements for impounding rain water reflect the knowledge of harnessing surface water. Irrigation from flooding of rivers was also prevalent.

The water-wheels or yantras (mechanical contrivances) moved men or beasts were finally driven by the force of flowing water. The oldest evidence of existence of water lifting devices is furnished by the antiquities unearthed from five thousand years old Mohenjodaro and Harappa. Sir John Marshall studied the pottery evidences from Mohenjodaro, to state the possible use of pottery for water-wheels in those times, which is corroborated by Ernest Mackay. In Indus Valley Civilization, the way different timbers were used, including those for drawing water, would lead one to think that the people of this civilization must have had experience of handling this raw material for centuries, if not for millennia. Same methods of lifting water to irrigate small rural holdings in remote areas, are still in vogue including the use of wooden levers, wheels, animal and human muscle power.

Mention is made of wells, canals and dams in the Vedas. It is evident that vedic people did not entirely depend on rainfall alone for agriculture, but some definite artificial devices were used by them. Rig Veda and Atharva Veda narrate references of mechanical contrivances for drawing and lifting water from deep wells. There is also mention of prosperity and well-being of people due to agriculture which was the main profession. In fact, till today all living beings, the human beings, the animals, the birds, the plants got their feed from the outcome of soil and water and prospered since their very existence.

Availability of sufficient water is germane for agricultural purposes and dependent industries. Though the average rain fall is 110 cms, its temporal and spatial distribution is imbalanced. Major portion of the precipitation occurs during four months from June to September and concentrates in certain specific areas. This results in periodic droughts and floods, at times simultaneously, exposing the land to devastation. About one third area of the country is drought-prone and one eighth haunted by occasional floods.

Abundant water resources

India is endowed with copious water resources. Surface water alone amounts to 178 million hectare metres besides significant sub-surface storage which are yet to be fully exploited. Table I indicates the total run-off and utilisable flow :

Table I Million Hectare Metres

Serial No. Name of Basin	Average Annual run-off	Utilisable flow
1. Indus	7.70	4.93
2. Ganges	51.00	18.50
3. Brahmaputra	54.00	1.23
4. West flowing rivers	28.80	6.92
5. East flowing rivers	34.80	33.80
6. Luni and Ghaggar	1.70	1.22
Total	178.00	66.60

The problem lies in the effective management of the water resources. Various physiological limitations such as lack of suitable storage dam sites, concentration of run-off in four months, highly variable characteristic of flow, diversion locations to irrigate the command area with dependable flow of suitable quality, etc restrain the utilisable flow to 66.6 million hectare metres. This can irrigate 73.5 million hectares of land (58.5 million hectares from major-medium irrigation and 15 million ha from minor irrigation). In addition to this, 40 million hectares can be irrigated from ground water resources, making the total irrigable area as 113.5 million hectares. So far only 63.49 million hectares have been brought under irrigation.

A rapid irrigation extension, no doubt, is essential, but the more urgent task is to make more effective use of the potential that has already been created. This will enhance the present annual average grain yield of 1.7 tonnes per hectare to a comfortable four tonnes or even more. Intensive cultivation of high yielding crops is possible on the land where assured irrigation supplies exist. How to bring about the command area development, which is the sheet anchor for irrigation and enhanced crop yield, is a challenge to authorities. This requires removal of existing shortcomings and lacuna in the water distribution system and management as listed below :

(a) There is no distribution system with in the outlet command which would take water up to each individual field.

(b) There is no system of rostering the share of water to each farmer within the outlet to ensure equitable distribution.

(c) Proper system does not exist for regulation and management of the irrigation network for timely delivery of required quantities.

(d) There is no agency to take up the planning, designing, land shaping and levelling the uneven land in the outlet command.

(e) The drainage network to drain off surplus water or to remove water logging in the low lying areas is inadequate.

(f) Effective agricultural extension system does not exist to advise the farmers on modern irrigated agriculture including the cropping pattern, the type of inputs, with their quantum, mode and time of application for intensive growth.

(g) There is lack of co-ordination between the various departments involved in command area development such as revenue, planning, irrigation, agriculture extension and the farmers.

(h) Infrastructural facilities are absent to ensure an orchestrated development of the area such as network of approach roads, short term and long term credit, processing industries, marketing facilities for procurement of inputs and disposal of outputs.

(i) Crop insurance system is not prevalent. The poor farmers are victims of calamities for crop failure due to hailstorm, cyclones, untimely rain lashing etc.

About 10 million hectares, out of the created irrigation potential of 63.49 million hectares, could not be utilised owing to backlog in command area development. The efficiency is less than 30 per cent, where the created irrigation potential has been utilised.

Irrigation potential

The total irrigation potential of 63.49 million hectares built in the country, is over three times higher than that in United States of America. But the yield of crop and forest production of India are comparatively far less. Even China produces more than this country in agriculture and forestry with lesser irrigation potential. In 1979, India had 20 per cent more land under paddy than that of China, but production was 40 per cent less. The average national paddy yields in China are over three tonnes per hectare as compared to India's 1.6 tonnes. It is a matter of concern that peasants and farm labourers are unable to satisfy their social minimum needs despite the huge investments in irrigation projects. This calls for better land and water management.

Modern agricultural know-how is available but there is a lag in transfer of this knowledge together with soil and water management and cattle breeding technologies, from the research centres to the field. The demonstration farm of an agricultural university produces five tonnes a hectare, whereas the farmer in the surrounding locality produces barely 1.5 tonne per hectare normally.

Rural areas, the major centres of agricultural wealth, are poorly developed. Proper facilities of infrastructure, financial mobilisation, input resource of fertilizer, good seeds, accurate watering, pesticides, improved bullock-cart and other implements and communication of modern techniques are not timely available. In most areas, farming is only a seasonal activity. The rural community is not provided with jobs for the entire year with the result that agricultural labourers move to urban areas for better employment. It would be rewarding, socially and economically, if a major part of the agricultural product producing unit is transferred to the rural sector. This will encourage deurbanization and help increase the standard of living of weaker strata living below the poverty line. Also, the cost of transportation would be reduced in avoiding bulk handling of raw materials. Already available rural technologies and implements are required to be improved.

Consider an illustrative example of installing a modern rice mill in the paddy growing region which can provide opportunities for the rice farmers and landless labourers to get varied jobs. Paddy husk can be gainfully used for manufacture of bags, paper, alcohol, poultry feed, bran oil etc. Collection, storage and processing operations emanating from rice crop, besides other dependent industries, create additional employment potential, thus arresting migration to towns and cities. Experience gained would make the illiterate rural folk skilled The quality of life would get improved. Similarly locating sugar mills in the midst of sugar growing areas would benefit the rural population in getting full time jobs. This will prevent the landless labourers to leave their hearth and home for making both ends meet. Employment potential too is created with other agro-based industries depending on fruit processing, oil seeds, cereals, pulses, cash crops etc.

Technical know-how

Technical know-how for recycling the agricultural wastes and other vocations like animal husbandry, pisciculture, bee-keeping and poultry farming, should be transmitted to the farmers through the organised agro-service centres. Injecting the results of research and development and market surveys into training of artisans, craftsmen, farmers and others concerned, needs to be considered as a very important aspect of extension service. A number of small industries can be established in rural areas by the farmers themselves, using their own agricultural wastes, byproducts and other resources within their reach. For instance, small processing mills can be set up using agricultural waste materials for boards, papers, files, biogas plants, processing of vegetables, use of plastics, soap making, brick manufacturing etc. Extraction of alcohol from potato and sweet sorghum, starch making from millet, corn products from corn and manufacturing of agricultural implements are some of the agro-based industries which can be established in many locations on a large scale. Presently, the agricultural production is not integrated with agro-based industries in the rural development.

Reckless tree felling should be checked. The consequences of the excessive deforestation are increasing floods, soil erosion, heavy silting of reservoirs and changes in microclimate. Vigorous reafforestation programme can provide a base for an economic upsurge, particularly for rural poor, apart from preventing degradation of eco-system. By afforestation 100 million hectares of land, the annual GNP can be increased by well over Rs. 150,000 crores providing transport fuels and petrochemicals with an energy content equal to 40 million tonnes of fuel oil as well as meeting the commercial cooking fuel needs of much larger population than today's, at nominal cost. It would not be difficult to bring 100 million hectares of land under trees in three to four decades, given the motivation and institutional assistance. Thirty three million hectares of land have, afterall, been brought under high yielding varities of crops by the farmers in about a decade. However, institutional hurdles need to be crossed. Private farmers can be entrusted with this reafforestation job as 143 million hectares of land is under their control. Forest departments have so far been unable to prevent the deforestation of their own 75 million hectares of land. Total area of land in India is 328 million hectares.

The profitability of growing trees could be brought home to adivasis and other rural folk. Well-planned forestry can create more employment potential than even industry. Small annual bank loans could be advanced to them against the standing tree crop. Had this practice been in vogue, the rural people on the western ghats, for instance, would not have felled thousands of hectares of priceless hard wood forests to plant *ragi*. The yields of this inferior millet from this forest-cleared area varies from 1 to 2.5 quintals per hectare, worth of Rs. 150 to Rs. 400 as compared to the current market value of the trees that have been felled running into million of rupees. In addition, the ecological health, the climate and the restrained water supply of the Deccan Plateau got adversely affected.

Consolidation of small holdings is a step forward. This should be followed in unconsolidated land areas.

Waste land, unsuitable for cultivation, can be utilised to grow trees and plantations for fuel, fodder and fibre. Energy yielding plants are particularly important for this country. Even the marshy areas and salt affected lands can be put to some use like recreation of wildlife habitat, vegetation growth etc. In fact, there is hardly any type of land that can't be made use of, for growing one thing or the other, with new technologies.

Dryland farming

Dryland farming is another very important field in which there is ample scope for improvement and requires urgent attention. At present the drylands, as the rainfed areas are called, account for three-fourths of India's cropped areas, producing barely 42 per cent foodgrains. The added importance accrues to rainfed areas as they grow almost entire quantity of pulses and coarse grains, besides major portion of oilseeds and cotton. The country, inter alia, imports about 1.3 million tonnes of edible oil alone at a huge cost of Rs. 800 crores a year which can be minimised, if not altogether curtailed. Except cotton, other dryland crops have been mostly neglected by the authorities as far as taking them from labs to fields are concerned.

Some of the farmers in selected pockets, have increased the yields of their crops considerably, after acquiring the new technology. For instance, a cultivator of Taddampalli village near Hyderabad in Andhra Pradesh, had a plot of half a hectare which depended entirely on the rains. Before dissemination of new technique, he had been obtaining from this holding, less than 10 kg. of pulse crop and about 100 kg. of millet. With the application of improvised scientific know-how, he reaped an all time high 1400 kg. of jowar in addition to 250 kg. of red gram from the same field. This knowledge of a package of practices was imparted by the International Crops Research Institute for Semi-Arid Tropics to a group of farmers including the one mentioned above. Improved technology comprised dry seeding ahead of June rains on broad beds and furrows, with sorghum|pigeonpea intercropping system, using high yielding varieties, fertilizers and plant protection measures. By advancing the date of sowing during rabi as well as kharif seasons, drylands yield better production.

Double cropping and intercropping techniques help to intensify and diversify the economy of a small farmer having fragmented holdings. The use of mulches provides a way for double cropping. It has been observed that the use of mulches for moong conserved 25 per cent more moisture at one-third metre depth as compared to the unmulched plots. A quick growing crop like green gram is sown in between a slow growing main crop like pusa ageti red gram variety. The interplanted crop completes its life cycle early and can be harvested well before the main crop begins to grow.

By the use of ridge and ditch system, two crops can be grown in the same holding. Alternating a metre of ridge is done with half a metrewidth of ditch, about one-third metre in depth. During the rainy season, the pearl millet is transplanted on the ridges in twin rows. The ditches function as micro-catchment areas for collecting rain-water and during the winter season a crop of mustard of safflower is grown in them.

Run-off water is collected in low areas of the field, to be utilised later to replenish the soil when its moisture gets depleted. This is known as water harvesting and is the most important way of boosting yield in rainfed regions. Increased production can be assured through development of micro-watersheds in each identified block of dryland farming areas.

Consumption of fertilizers

Nitrogen, phosphate and potash constitute the macro-nutrients, required in large quantities as compared to zinc, iron, copper, manganese, magnesuim, molybdenum and boron called micro-nutrients, needed only in minute quantities. It is desirable to apply the specifically needed nutrients on the basis of soil tests. Rotation of crops, besides growing leguminous plants like green manure (dhaincha) and cluster beans, recycle the diminished nutrients back into the soil. The injection of the nutrient in the moist zone, 5 cm below the seed level and 5 cm to the side, has given optimum results in dryland areas. Aqueous fertilizers overcome the low moisture in soil.

The country's current consumption of fertilizers is around 6 million tonnes. The nutrient utilisation comes to only 20 kg per hectare for wheat in India as compared to per hectare consumption of 423 kg in West Germany, 430 kg in Japan, 274 kg in U.K., 269 kg in France, 210 kg in Egypt and 106 kg in U.S.A. Reduced quantum of fertilizer input results in lower yield. Application of the correct dose of right type of mixed nutrients, at the right time, is crucial to get their best in augmenting farm productivity.

About 85 per cent of the total fertiliser consumption is confined to irrigated areas of the country. Strong resistance by the farmers to the use of fertilizers in dryland areas is mainly due to the high element of risk assumed to be existing in view of the erratic rainfall. This assumption is erroneous and does not hold good. The analysis has revealed that the ineffectiveness of fertilizers in dryland was because of growing long-duration crops which did not receive enough moisture during the later stages of growth. This difficulty has been overcome with the development of short-duration, fertilizer-responsive, high yielding varieties of crops.

Oil seeds and pulses are particularly prone to insect attack. In 1976-77 for example, 19.8 per cent of cropped area suffered from pests but 7.2 per cent area only was treated with pesticides. To cover 60 per cent of gross cropped areas by pest control measures, the present capacity of 70,000 tonnes of varied types of pesticides is required to be increased to 80,000 tonnes by the end of sixth plan.

In about 14 million hectares of semi-desert dry-farming areas, getting scanty rainfall in western India, grain yield can be stepped up by 25 to 50 per cent by a simple technique of running a heavy roller soon after the rainfall or irrigation. Water percolating down quickly beyond the reach of plant roots in the course soil of this region is prevented through compaction of subsurface layers, thereby making the moisture available to plant roots. No costly inputs are involved in the process. Small and marginal farmers can easily make use of this technique. The only requirement is 200 kg roller which can be drawn by bullocks and can be jointly owned by the farmers. Experiments conducted have revealed that by making 20 passes, bajra yield has risen to as much as one and a half times.

Hydroponic technology

Advanced hydroponic technology, interestingly, can step up crop production, without use of soil, between four to thirty times per hectare as compared to a conventional farm; this has been claimed by an American agricultural company. The modular hydroponic unit basically comprises two vinyal tubes, one above the other. The upper tube supports the crop in an insert gravel lie mixture, whereas the lower tube holds the nutrient water supply in a self-contained recycling system. The nutrient solution is automatically forced lead to the plants several times a day and also aerates the root system. All variables of the growing process can be controlled and maintained in the new system. Quality crop yields, at reduced costs, are achieved through a balanced diet of mineral nutrients, proper water and light levels, complete temperature control and the elimination of insects and weeds. Incidentally, the system helps in reducing the need for fertilizers, water, pesticides, space, labour costs and risk of crop failure. Successful commercialisation of the process can bring about a significant worldwide change in the food production.

Dynamic management needed

Water resources development needs more care and dynamic management.

New sources have to be tapped to meet the future requirements of water, applying multi-pronged approach.

Recycling of used water deserves encouragement as integral part of water conservation drive.

Intensive use of water within the river basins and large scale inter-basin transfer from surplus areas to deficit areas are desirable.

Conjunctive use of ground water in minor irrigation, calls for both qualitative and quantitative assessment of the ground water resources of the country. This measure can help to mitigate the salinity and water-logging, apart from irrigating lands, not commanded by gravity flow.

Modernising the irrigation system is appropriate, considering the "plant" as the real water consumer rather than the "cultivator". The accurate assessment of crop water requirement and estimating its sensitivity with respect to crop produce could help to refine the design, construction and operation of the system.

Optimizing the utilisation of water with better reservoir operation, reducing the seepage by lining the canals and distributories, extending the water course to cater each field, together with warabandi system can improve the irrigation efficiency considerably.

Development of fisheries in ponds, lakes, irrigation tanks and reservoirs can provide nutritious food besides increased employment.

Small hydropower from nallas, canal falls, rivulets and streams can serve the remote rural areas with medium and small scale industries in addition to irrigation pumping and domestic use.

Effective measure, interalia, would envelope watershed management, command area development, land use changes, scientific dryland farming, care of waterborne diseases, siltation, water quality, development on socio-economic and socio-cultural aspects, ecosystem, waste water management including water pollution control, and recycling of sullage, sewage and used water. Scientific land and water management provides the foundation of caring for the multitude. Mass media like television and radio should be extensively used for educating the populace.

Development of millions is essentially a multidimensional social process concerned with man, as an individual, a society and a nation, with basic respect for the worth and dignity of every human being. Self reliance is fundamental and provides the key for balanced and rational development, which can be cultivated through the dexterity, enterprise, adroitness and skill of our people. Training, development, mobilization and utilisation of manpower are crucial to the rate of overall growth. New vistas offered by science in technology and management of resources can, no doubt, ameliorate the lot of India's millions. ☐

Satisfactory Implementation of 20 Point Programme in Mizoram

MIZORAM has achieved over 78 per cent in the field of adult education. It had earlier completed its target of enroling 2,000 children for education in July last itself.

Mizoram has also reported plantation of all the three crore trees allocated to it for the current year under the 20-Point Programme.

Progress in the improvement of slum areas has, however, reached only 10 per cent covering 2,000 people. Out of these 1000 were covered in the last month alone. During the current year, so far only five problem villages have been provided drinking water against the annual target of 31 villages.

In the field of sterilizations the Union Territory has reported 30 per cent success. Thirtyseven small village industries have been set up in the first five months against the annual target of 100 units.

Mizoram's drive against smuggling last month, resulted in the seizure of 22.5 kg. of Ganja from a gang of four narcotic smugglers who were arrested and proceedings launched against them. ☐

Planning for our energy needs in 2000 AD

K. Vinayak Rao

By virtue of the resources the country possesses, there is vast scope for meeting energy needs through a well drawn plan, which seems to emphasise decentralised or small scale energy supply systems capable of meeting the needs of the region.

ENERGY CRISIS is a global phenomenon that has hit both the developed and the developing countries. On account of scarcely developed resources and not so developed technology, it has proved more difficult for the developing countries to manage. Energy, being a vital requirement for economic development is needed in increasing amounts to improve agricultural and industrial production, and thereby provide a better quality of life for our people. It therefore becomes important for us to draw a plan for our energy needs in not so distant a future, and take appropriate steps towards the realisation of its goals.

Planning in this respect needs to be more unified, embracing the requirements of all sectors of the economy. What is needed, is a broader perspective and a discerning eye to tap every possible, preferably renewable, source of energy. The growing population and demand for energy by various sectors of the economy are two main aspects on which we should focus our attention.

Engrgy in key sectors

Basically, energy is utilised in three key sectors of our economy, namely, agriculture, industry and the households. The needs for energy of these sectors are different in nature and it is essential to bear this distinction in mind. The main sources of commercial energy supplies are coal, oil, hydro and nuclear power. These account for a little under 60 per cent of the total energy consumption. Another significant feature of the Indian energy scene is the important role played by the non-commercial forms of energy namely fire-wood, agricultural and animal waste. Even today they account for over 40 per cent of the energy consumed in India. The contribution from fire-wood, agricultural and animal waste in total non-commercial energy consumption is 65, 15 and 20 per cent respectively. Though the consumption of non-commercial forms of energy has been on a decline, strangely, their contribution in terms of heat value has been growing in absolute terms. A large part of the non-commercial energy is utilised in cooking and such other household jobs, accounting for 80 per cent in rural areas as compared to 51 per cent in urban areas. Also in the recent years there has been a significant and continuing increase in the oil prices, coupled with uncertainty about its availability. Import of crude oil and other petro products requires over 70 per cent of our foreign exchange earnings. In order to achieve self sufficiency in energy, a major and sustained effort is needed, predominantly in two directions viz. in expending indigenous conventional energy sources such as coal, oil, hydro and nuclear energy, and developing rapidly new and renewable sources of energy such as solar, biomass, wind etc.

The coal reserves of India are estimated at about 110,000 million tonnes. Since most of the coal found in our country is of an inferior quality there is a natural constraint on the expansion of this resource. Further there exist certain operational constraints on the coal fields such as recurring power-cuts, poor industrial relations and technological deficiencies. So, while planning for expansion in this capital intensive field, one can fix only moderate targets.

Water potential

In water potential, India stands fourth in the world. Based on normal flow of water, India's water potential has been estimated at over 40 million kilo watts. India has so far utilised only 17 per cent of its water power potential. This shows that hydro-electricity can prove to be a very promising source of energy in the near future, and significantly high targets of achievement can be fixed. However, the question of evolving a right policy to realise our goals needs a new outlook, as will be discussed subsequently.

A lot of effort has been put in to explore and develop new sources of petroleum. Interesting possibilities for petroleum are claimed to have emerged recently in the Krishna, Godavari, Cauvery and Kutch basins. Natural gas has been struck in Tripura and the Andaman islands. Both these reserves are believed to be quite significant.

Exploration on a much larger scale is required to meet our future energy needs; however, there is a limited scope in this direction. Simultaneously, it is important for us to initiate petroleum consevation drive. There is a vast scope for conservation of energy in various sectors of the economy. Industries can benefit from increasing fuel efficiency level by modernising their technology. The Public Sector undertakings can take initiative in this fields, and some private firm too can specialise in fuel conservation techniques. High Speed Diesel is the main fuel used by the transport sector and it is highly desirable that fuel conservation measures are undertaken by the railways and road transport undertakings. Media can definitely play a predominant role in motivating and educating people in such conservation drives. Research and Development activities such as heat conserving kerosene wick stoves, improved industrial burners, etc. is already being undertaken. Since quite a big portion of the energy generated is used by house-holds, there is a greater scope for research and development activities to produce more economic household appliances and popularise them.

India is already on the nuclear energy scene and at present there are three nuclear reactors functioning in our country and two more will be coming up soon. For our nuclear reactors, we are still required to import heavy water, so, it is imperative that in the near future we should strive to attain self sufficiency in its production. To accelerate the production of heavy water three more projects have already been undertaken. As a nuclear fuel, thorium promises potential uses and research work in the direction of developing reactors suitable to use thorium is an area of importance, in planning our energy needs in 2000 A.D.

Limitation

A basic limitation in expanding all these conventional sources of energy is that they are not renewable. But the renewable sources of energy are of a different nature altogether. They demand a completely different type of technology and in some cases can supply energy, only discontinuously. However, that need not worry the energy planners, because the need of the time is to be able to bring about an energy policy which can fully exploit the non-conventional sources, and thereby decrease our dependence on the conventional sources. Renewable sources of energy are of particular interest for meeting the decentralised energy requirements in the rural areas and for supplementing the needs in the urban areas. Therefore, the future energy policy should aim at introduction of small scale energy systems which can be in consonance with India's rural, agriculture-based economy. Clearly, such a policy is bound to be region specific, i.e. the energy system is such that it can meet the local needs to the maximum extent (using renewable sources), is unique and best fitting for the region concerned. Remote communities which cannot be reached by the electicity grid except at high costs or do not have easy access to conventional commercial fuels, could be the first to be provided with energy for domestic use, as well as, for rural industry and agriculture through renewable energy technologies. The additional merit of these technologies is that they have little adverse impact on the environment as compared to conventional sources. In this respect, the Sixth Plan is a take off point towards the future energy policy. The government has established a Commission for Additional Sources of Energy which will be responsible for formulating policies and programmes for the development of new sources of energy and coordinating research and development activities.

At the international level too, India has played a leading role in bringing consciousness about the potential of the renewable sources of energy. The UN conference at Nairobi provided a useful occasion for this purpose. The recommendations of the conference include strengthening of research and development through international cooperation and formation of an inter-government body to oversee and monitor implementation of the Nairobi programme. Here also a collective effort put in by the developing countries can have a significant impact on the research and development activities, benefiting all.

Make hay while sun shines

India is indeed fortunate in that in most parts of the country there are between 250—300 days of useful sunshine per year. Therefore, solar energy seems to be the most promising source to meet our energy requirements in 2000 A. D. Since very little work has been done in this area in our country till now, there is indeed an urgent need to gear up the research and development activities. The first major task ahead is that of survey and collection of data about solar radiation for each district. In this context the Commission for Additional Sources of Energy has compiled a hand book of solar radiontur and other climatiological data for a few selected places in the country. The next thing to do is to identify areas where energy is consumed. For example in urban areas and industrial estates etc., electricity is the main form of energy. On the other hand in the rural areas, agricultural operations mainly running pump sets etc., consume mostly diesel or electricity. In urban households and other establishments besides cooking, cooling or heating homes and buildings consumes quite a lot of electricity. In the rural households cooking is the main energy consuming process. For all these operations there is a need to develop appropriate technology which enables utilising solar energy during the day time. For instance, utilisation of solar energy for cooling or heating purposes in urban areas calls for research in building designs. On the other hand in the rural areas the need of the time is to develop suitable household cooking appliances. This will result in a decrease of dependence on electricity and petroproducts by 30—40 per cent, which would indeed be a great achievement, looking at the present shortage of power.

The use of solar energy to meet urban needs has several other advantages. Most cities have a well developed grid and failure or defect at any one point in the grid often leads to power cut for a very large area. If buildings are such that in the summer solar energy is utilised for cooling, this draw-back can be overcome. Solar cookers on the market are such that they demand cooking outdoors. This, being incongruent with urban culture, is the main hinderance in popularising this appliance. Therefore, to popularise the use of solar energy for cooking, one has to develop a technique for efficient transmission of the heat so that the cooking can be done indoors. It is therefore important to develop suitable building technology before 2000 AD, and make it obligatory on all builders to use such a technology to meet the energy needs. Electricity should then serve as an alternative, in case the solar intensity is not sufficient.

Use of biomass

The use of biomass such as agricultural wastes, animal dung or energy plantations as a source of energy needs greater popularisation in both rural and urban areas. Biogas can prove to be the most important source of energy in this category. The cattle population in India is nearly 237 million. Assuming the average wet dung obtained per animal, per day to be 10 kg, a collection rate of 66 per cent of the total availability of cow dung in the country would be 575 million tonnes per annum. This can enable the production of 22,425 million. cu m. of biogas, which in turn can replace kerosene oil to the extent of 13,904 million litres per year. The technology necessary for establishment of gobar gas plants is already available and fields in which it can prove useful have been identified. In the rural areas cooperative societies can be formed to establish and operate such plants to meet the rural households need for energy. In the urban areas, municipal bodies can establish and operate sewage plants, which can meet the cooking needs of the cities. Though some experimental plants have been started in a few cities, very little work has been done towards establishment of such plants. In order to make these schemes economically viable, efforts are needed to standardise the equipment and reduce construction costs.

Afforestation too has a great potential to meet our rural energy needs. In the Sixth Plan itself, a programme called "Social Forestry" has been initiated. This envisages planting of trees outside the protected areas, mainly semi arid regions, to provide fuel wood in addition to generating employment opportunities. The most sizable population that is to be benefitted by this scheme is that of Adivasis. By attaching high priority to such programmes in our future energy policy, we can attain the goal of bringing one third of the land in our country under forests, as our National Forest Policy envisages. Besides, the programme will help in restoring ecological balance too.

Microhydel projects

In the recent years the importance of small hydro power plants has also been recognised. The general topography and other favourable conditions in various parts of the country, and the low maintenance cost permit the availability of power supply through micro or mini hydel schemes in remote and isolated regions which are not connected with the national grid. Micro and mini hydro plants usually have installed capacities ranging up to 1000 KW and 7500 KW respectively, are thus capable of meeting the local needs. Though initially small scale hydro power development may make only a marginal contribution, it will have a significant impact on the socio-economic development of the region of its location.

In addition to these renewable sources several others such as wind energy, tidal energy, geothermal energy etc. have been identified. However, these seem to be much less dependable as the research in these areas demands heavy investment and the outcome may not always be economical to implement.

In addition to these renewable sources several others resources India possesses, there is a vast scope for meeting our energy needs through a well drawn plan, which seeks to emphasise decentralised or small scale energy supply systems capable of meeting the needs of the region. The keynote of such a plan is "small is beautiful."□

1350 Primary Rural Markets in Sixth Plan

The Government of India has planned to provide Central assistance for the development of 1350 primary rural markets during the Sixth Five Year Plan. During the first three years of the Plan, the Ministry of Rural Development has already sanctioned Central assistance of Rs. 21.91 crores for the development of 1311 primary rural markets.

To help the farmers, particularly the small and the marginal who depend on the nearest rural markets, like 'haats' and 'shandies', for the sale of their small marketable surpluses and for the purchase of their daily needs, a scheme for the development of primary rural markets and wholesale markets in backward areas is in force since 1977-78. Under this scheme, grant-in-aid to the extend of Rs. 1.50 lakh per primary rural markets, and Rs. 5 lakhs per rural wholesale market situated in backward areas. covered under Hill Area Development Programme, Integrated Rural Development Programme and Drought Prone Areas Programme, is given for the development of infrastructural facilities. Till March, 1983, Ministry of Rural Development have released assistance of over Rs. 20 crores to the various States and Union Territories for development of 1884 primary rural markets.

Industrial relations in unregulated industries

R.C. Sharma

Workers are not only wage earners but also co partners of the employers in the total production efforts. This consideration of the workers calls for necessary steps to be taken for promotion of healthy and congenial relations between the employers and the workers. For this, the employers must knock out of their heads the nonsense that they are bosses, argues the author. He says, "the relations between workers and management are human relations."

THE SIGNIFICANCE of labour—capital relation or industrial relations today has assumed high proportions in the field of industrial development, so much so that in the basence of good industrial relations the production is bound to suffer adversely thereby affecting the entire economy.

Feature of industrial relations

One of the characteristic features of the modern industrial system is the existence of two classes : (i) Employers and (ii) Employees. The problem of industrial relations is the problem of relations between the employers and the employees, whose common aim is to produce maximum possible, yet they have distinct and opposite interest. "Industrial relations is the designation of a whole field of relationships that exist because of the necessary collaboration of men and women in the employment process of industry". It may also be defined as "the complex of interrelations among workers, managers and government". In brief it is "commonly used to denote relations of all those associated in productive work including industry, agriculture, mining, commerce, finance, transport and other services. The main aspects are the establishment of the conditions under which the proceeds of the work are divided as dividends, salaries and wages between shareholders, employers, management and work-people of various grades, manual, clerical and technical". It is clear therefore, that in industrial relations it is stressed upon, how people get on together at their work, what difficulties arise between them, how their relations including wages and working conditions are regulated and what organisations are set-up for the protection of different interests. These relations include individual relations, i.e. relations between employers and work-people at the plant level as well as collective relations i.e. relations between employers or their organisations and trade unions and also the role of the state in regulating these relations. Industrial relations, broadly speaking, are the product of social and economic systems. These relations arise out of the employer-employees relationship in modern industrial society. This relationship is complex and multidimensional resting on economic, social, psychological, ethical, occupational, political and legal levels.

Good industrial relations, therefore, are sine-quo-non for increasing production and improved productivity as without industrial harmony, economic progress is severely retarded. But the problem is that workers have quite a different angle of vision from that of their employers. The workers in order to make their living comfortable and dignified have only their labour to sell. In modern society a worker's status depends not upon the importance of the work he does but upon his economic position. Unfortunately, industrial workers in our country belong to the lowest economic stratum. They are largely dependent upon the mercy of their employers for their livelihood and continued employment. They feel (and they are) subservient to their employers which make them feel a sense of complex as regards their social status.

On the other hand, employers follow the policy of profit making even at the cost of other factors of production. They achieve this goal either by increasing the price of their products or by lowering down the cost of production through low wages or wage nibling etc. "If however the workers are well organised in a trade union, they would press strongly for higher wages and better work conditions. It follows that there would be friction between employers and workers, leading to strike or a lockout, if neither party was prepared to give way". The problems of labour and capital exist in the large scale and the small scale industries alike. The clash of interest is found in labour and capital in small scale industries with varying degrees of intensity and seriousness. So long as harmony in both the employers and the employees, does not exist, a sense of disgust for each other shall persist. Both should have the ideals of *Sarvoday* which means the progress, prosperity and happiness of all. But it is possible only when they think themselves a part of production, and if they think themselves independent and separate factors of production, the trouble is bound to exist.

Conditions in unregulated industries

The same conditions are prevalent in unregulated industries where one can very well notice the grumbling of employers over their right and murmuring of workers over their privileges. This issue of rights and privileges rests upon the practices, rooted in customs and nurturned in traditions, but not on laws. Gradually the friendly behaviour between employers and employees in these factories, is disappearing. The employers do not have any sympathetic attitude towards their workers nor do they give them any brotherly treatment. In brief the employers are all in all. The employer in the absence of unions faces small or no opposition to the order he issues. He hires. He fires. He promotes and he demotes. He rearranges machinery and plant lay out. He introduces new techniques and materials. He schedules hours of work and makes wages' decisions. Above all, his decision is final resting upon his de facto possession of an absolute industrial authority in the organisation and operation of his business. He may use his authority in a kind, soft and benevolent manner or he may use it with a harsh and autocratic manner.

Workers in unorganised sector

On the other hand, the workers in unregulated units of production are not united; they are illiterate and have weak bargaining power. To quote Gellen W. Miller, "The individual un-organised worker is commonly helpless to exercise actual liberty of contract and to obtain acceptable terms and conditions of employment. Such is the case with unregulated industries. The workers are usually exposed to the risks of insecurity of employment, exploitation and some times harassment because of their continuous nexus to villages or their migratory character or poor bargaining power, weak organisation or because of absence of any protection by law. There exists on many occasions lack of effective personal contact between the employers and the employees An inarticulate expression of grievances in the form of absence from work by the labourers is the sign of absence of any good relations between the two parties in the unregulated units of production. The employers and the employees do not look to the welfare of each other. It results in wide fluctuations and heavy rate of labour turnover.

If the strikes and lockouts are not very prominent in these industries, it is due to the fact that workers are financially weak and they do not enjoy the benefits of strong trade unions. Of late, the workers in unregulated units have also started forming their unions for redressing their very genuine grievances which were distinctly over looked or neglected by their employers. A sense of unionism among workers in unregulated sector is developing gradually strengthening their bargaining power. It is clear that in the unorganised sector of production a sense of unity among workers has taken place. At present, broadly speaking, the workers may not take recourse to strikes and the employers may not declare lock-outs but a conflict of opinion is being brewed by the changing global industrial atmosphere.

Better industrial relations may be established if the employers and the employees are brought on the same platform of discourse and they are given opportunities to express their feelings and points of grievances openly, if workers form and utilise their unions in right perspectives and the employers also behave with the spirit of brotherhood. Such organisations are necessary for profitable and real bargaining power also.

Approaches to human relations

Employees working in the un-organised units have poor bargaining power. In the absence of any organisations of the workers one can hardly think of bringing employers and employees together and close to each other for understanding each others problems and finding their solutions. After all the workers are not only wage earners but are also co-partners in the total efforts of production and worthy and honourable members of the society. It is therefore, necessary that steps should be taken to promote healthy and congenial relations between the employers and the workers. Employers should treat their workers as part and parcel of the industry.

The employers must knock out of their heads the nonsense that they are bosses. The whole bureaucratic organisation must be scrapped and replaced by a democratic organisation of joint consultations committee methods, suggestion schemes, free interchange of idea around a table if possible over a cup of tea.

Suggestions

It is now the right time when the employers considered labourers as their partners, their co-workers who have also certain rights with liabilities. Although it may take time to inculcate in them this sort of feeling, efforts by social institutions and steps by the Government may be helpful in creating congenial atmosphere and establishing good industrial relations On the otherhand, the workers should also realize their progress, well being and prosperity are closely attached to the progress and prosperity of the unit in which they work

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Industrialisation in rural areas

Vivek S. Deolankar

Gandhiji had realised the dent made in the rural society and its economy by the machine economy. He advocated Khadi and Village Industries and self sufficiency of the village. He worked for the removal of the stigma of untouchability and low status of the artisan so that the artisan could get this due place and share in the rural society, its economy and development.

TRADITIONALLY Indian villages enjoyed almost complete economic autonomy and self-sufficiency. The products and services of the artisan were bartered within the village. However, the gradually increasing inflow of machine-made cheap consumer goods started restricting cottage industries and creating unemployment. Agriculture having little capacity to absorb surplus labour, the rural population began to migrate to urban areas, creating there numerous social, economic and health problems. The trend increased with the rapid growth of population as well as industries.

Industrialisation in rural area is essential. Considering the inadequacy of arable land, agriculture can be expanded and intensified within narrow limits, too short of what is required for a prosperous and vibrant economy.

Gandhian approach

Gandhiji had realised the dent made in the rural society and its economy by the machine economy, when he advocated Khadi and Village Industries and self-sufficiency of the village. He worked for the removal of the stigma of untouchability and low status of the artisan so that the artisan could get his due place and share in the rural society, its economy and development.

Government's approach

The Government of India, committed as it had been to the welfare of all alike, also recognised in its New Industrial Policy Resolution, the need for the dispersal and decentralisation of industries and securing a balanced and co-ordinated development of industrial and agricultural economy in each region. It is accepted that disparities in the development of different regions should be progressively reduced and the national planning should ensure that facilities are steadily made available in the areas lagging behind industrially or where the need for providing employment opportunities is more imperative, provided the locations are otherwise suitable. This aspect of development has been increasingly emphasised ever since. Apparently, there is no other way of providing gainful employment to the maximum number of our teeming millions and warding off economic, social and political discontentment and upheaval which might follow if employment and development opportunities are not provided in a manner mitigating regional imbalances and ensuring maximum possible employment of different factors of production, particularly labour, for the welfare of whom all the planning and developmental activities are meant.

Problems of industrialisation

Industrialisation in rural areas is aimed at the maximum productive employment of local resources, revival and development of traditional industries and skills, establishment of new units and integration of agricultural and industrial developments in rural areas, where 70 to 80 per cent of the total population of the country live, so as to provide increasing employment to local people, add to local prosperity, steadily narrow down the disparities between urban and rural incomes, prevent migration of rural population and as a corollary save urban areas from further deterioration of economic, social and health problems arising out of such a migration. This, considering the vast and dispersed expansion of rural areas throughout the length and breadth of this country, implied a very difficult and stupendous task which would take decades to complete and the nature of which necessitated a thorough scanning of the area, collection of information and data, preparation of

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Management information systems for IRDP

S. Balakrishna

Management Information Systems rightly place emphasis on selectivity of information, its timeliness, frequency etc. These elements are to be built into the current reporting system in rural development projects. The author has attempted in this article on two specific aspects of Integrated Rural Development Programme and suggests the beginning be made with these two, namely, selectivity and frequency.

MANAGEMENT Information Systems rightly place emphasis on selectivity of information, its timeliness and frequency, minimum 'distance of travel' utilisation for decision-making etc. It will be quite some time before these elements are built into our current reporting system in rural development projects. We illustrate here two specific aspects in the context of the Integrated Rural Development Programme (IRDP) and suggest that a beginning be made with these. These are—(a) selectivity and (b) frequency.

Following the terminology of the World Bank, it may be said that the activisation of inputs in IRDI (asset given to beneficiary training credit etc.) leads to 'results' or 'benefits' which may be categorised as —(a) output; (b) effect (c) impact. 'Output refers to initial result like acquisition of skill to manage the unit/scheme, increased yield of milk etc. 'Effect' corresponds to achievement of results coinciding with the programme objective, viz., earning of net incremental income by the beneficiary to bridge the poverty gap and cross the poverty line (at the end of two years or at the earliest). The term 'impact' transcends the programme objectives and is concerned with the enduring nature of benefit to the individual (productive use of income earned for welfare of the family, demand for further training or technical advice, determination to remain above the poverty line. etc.) or to the society/community (acting as a change agent to achieve spread-effect). In the time sequence, the last is the latest to occur. Thus, the three terms—output, effect and impact may be said to imply the realisation of intermediate, programme and ultimate objectives respectively.

It may also be mentioned that monitoring is concerned with the conversion of inputs into output while concurrent evaluation deals with output-effect transformation. Impact evaluation concentrates on the chain effect-impact.

Selectivity

The information which flows from the field level to the higher levels for feed-back should not be the same for the entire channel but be selective. For instance. problems identified through input monitoring covering the aspects of RASU (Requirement, Availability, Supply and Utilisation) may be communicated by the filed officials at the block level to the next higher level, namely the district (either the DRDA or the concerned technical department). Measures taken at this level (block) to resolve the problems as well as an indication of those required to be taken for other problems at higher levels (district or above) may also be intimated. In the normal course, the flow of information of this type should stop at the district level and not go beyond. Deviations from this procedure may, however, be made in exceptional cases when they are warranted.

The information content for the flow from the district to the state level should relate to results of output monitoring and related problems. The extent of realisation of intermediate objectives should be reflected in this communication from the DRDA to the State IRD Department. This need not be the concern of other levels—lower (block) or higher (centre) Exceptions may be made as before

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Problems of agricultural growth in Developing Countries

Usha Patel & Rupa Shah

At a three-day meeting of the coordinating group of experts on agriculture from the developing countries, held in New Delhi, early this year, great significance was attached to the fact that hundreds of millions of people in the developing world were still without food. The authors, have emphasized in this article the need for optimising irrigation and promoting dryland farming as an immediate requirement.

HUNDREDS OF MILLIONS of people in the developing world are still without any food. Population growth, the effects of which are often exacerbated by a highly unequal income distribution, has sharply reduced both the per capita benefits of increased food production and the associated increases in income per capita. Success or failure of agriculture owes much to factors that influence all economic activity. If it lags, it is because of inadequate investment, lack of incentives and inappropriate policies as well as problems of technology, climate and soil.

It is indeed against this background that a three day meeting of the coordinating group of experts on agriculture from the developing countries held in Delhi from 14th to 16th February, 1983 assumes greater significance now than before. While the experts were expected to draw up a blue print of a programme for achieving self-reliance especially in food security through agricultural development, it would be worthwhile to appreciate the problems of agricultural growth in the economic development of developing economies and need for investment to stimulate, sustain and stabilise agricultural production in these countries.

Agriculture & Economic Development

The continuing importance of agriculture in the economies of developing countries is reflected in the association between the growth of agriculture and of the economy as a whole. Among countries where the agricultural share of GDP was greater than 20 per cent in 1970, agricultural growth in the 1970's exceeded 3 per cent a year in 17 of 23 countries whose GDP growth was above 5 per cent a year. During the same period, 11 of the 17 countries with GDP growth below 3 per cent a year managed agricultural growth of only one per cent or less. Agricultural and GDP growth different by less than two percentage points in 11 of the 15 countries experiencing moderate growth. There have been exceptions, of course, but they prove the rule; fast GDP growth and sluggish agriculture was a feature of some of the oil or mineral based economies such as Algeria, Eucador, Morocco and Nigeria.

The parallels between agricultural and GDP growth suggest that the factors which affect agricultural performance may be linked to economy wide social and economic policies. In the many low income countries where agriculture predominates, effective policies, institutions and investment programmes for agriculture are virtually synonymous with effective over-all management. This is not surprising since there are many important growth linkages between agriculture and the rest of the economy. Expanding agricultural production through technological change and trade creates important demands for the output of other sectors notably fertilizer, transportation, commercial services and construction. At the same time agricultural households are often the basic market for a wide range of consumer goods that loom large in the early stages of industrial development—textiles and clothing, processed foods, kerosene and vegetable oils, aluminium holloware, radios, bicycles and construction materials for home improvement. In middle income economies, agricultural policies are only slightly less influential. Despite the similar resources and history of the countries, agricultural productivity has increased twice as fast in Cameroon and Liberia in recent years as it has in neighbouring Guinea and Ghana—and four times as fast in Tunisia and Colombia as in Morocco and Peru.

Agriculture faces special problems of which two are the most important. The first is biological—the close dependence on the natural environment. This results in output levels that fluctuate unpredictably from season to season and growth that varies greatly from one region to another depending on natural resources and the extent to which their potential has already been developed. The second is economic—the problem of the radical adjustments farmers face in the process of agricultural development.

Agricultural Growth

According to the estimates of the FAO, world cereal production is placed at 1533 million tonnes for the year 1982-83. While the increase in cereal production has been largely attributed to the increased contribution of 11 million tonnes in Eastern Europe and the U.S.S.R. and of one million tonnes in the developed countries, there has been a conspicuous fall of four million tonnes in the developing countries. The demand and supply pattern is likely to lead to an increase in carry over stocks of 36 million tonnes during 1982-83 in addition to the earlier rise of 42 million tonnes in 1981-82. This will, however, not bring about any improvement in the state of affairs of the developing countries which continue to reel under the widening food gap. Thus, the imbalance in the world cereal situation is heightened by the fact that though stocks with the developed nations (excluding U.S.S.R.) have reached the breaking point of 209 million tonnes in 1982-83 from the level of 120 million tonnes in 1980-81, there has not been any appreciable change in the stock position of the most needy developing countries. Their total cereal stocks at 98 million tonnes at the end of the current season will remain at the 1976-77 level.

Agricultural output in the developing countries considered as a group grew at historically high rates. With growth of just under 3 per cent a year during both the 1960's and the 1970's. But the rate of growth of population was also unprecedentedly high. The outcome was a modest (0.3 and 0.4 per cent a year) increase in agricultural and food output per capita.

As is usually the case, these aggregates conceal substantial differences. In particular there was an acceleration of growth of agricultural output in Southeast Asia, from being near the average for developing countries (0.3 per cent per capita a year) in the 1960's it rose to 1.4 per cent a year in the 1970's. The Latin American countries also increased their growth of agricultural output per capita upto 0.6 per cent a year in the 1970's from 0.1 per cent in the 1960's.

By contrast the yearly rate of growth of agricultural output in Africa declined (from 2.7 per cent in the 1960's to 1.3 per cent in the 1970's) and the rate of population growth accelerated. These changes meant that output per capita grew at 0.2 per cent a year—during the 1960's, but then fell by 1.4 per cent a year in the 1970's. Part of the decline was associated with a slow down in the production of non-food crops (tropical beverages and fibres) but the growth of food output per capita was also transformed from a modest increase in the 1960's to a decline (-1-1 per cent) in the 1970's.

In South Asia, balance between population growth and agricultural growth remained essentially unchanged over the two decades. In spite of growth rates of agricultural output which averaged 2.5 per cent and 2.2 per cent respectively, output per capita grew at only 0.1 per cent in the 1960's and about zero per cent in the 1970's. This performance—disappointing since South Asia had been one of the major beneficiaries of the Green Revolution and of massive investments in irrigation and fertilizer—is a salutory reminder of the consequences of high and sustained rates of population growth.

Unsurmountable Problem

For centuries, farmers increased their output mainly by increasing the amount of land they farmed. This is no longer the case, in the past two decades increased acreage has accounted for less than one-fifth of the growth in agricultural production in developing countries. Nonetheless there is still a great deal of unused arable land— estimates for developing countries range from 500 million to 1.4 billion hectares compared with about 820 million hectares currently under cultivation. These estimates can, however, mislead. The unused land is not there where the people who need it most are and FAO reckons that only 10 to 15 per cent of unused arable land in 1980 might be cultivated by 2000 A.D. There is ample cultivable land in the humid and sub-humid parts of the Latin America and Sub-Saharan Africa, but most of Asia (except Indonesia) are extremely limited. China has reached the limits of its arable land and a number of other countries are fast approaching this point.

The imbalance between people and land reserves is only one factor limiting the development of more acreage. Disease has discouraged permanent settlement in large parts of tropics and sub-tropics. The eradication of malaria in the 1950's opened extensive new areas for cultivation, especially in Asia. Today the main disease constraining settlement and cultivation are river blindness (onchocerciasis) and sleeping sickness (trypanosomiasis) which occur primarily in Sub-Saharan Africa.

To avoid river blindness, large areas have been left unfarmed in the fertile valleys of the Volta, Niger, Congo, Gambia and upper Nile rivers. Efforts to eradicate this disease are supported by West African governments WHO, FAO, the World Bank and bilateral donors, but progress is slow. Trypanosomiasis, carried by the tsetse fly, is an even greater obstacle.

Its presence prevents livestock based farming on some one billion hectares of high rainfall land in Africa. Insecticides have been tried in several countries including Nigeria, Cameroon and Botswana but their cost and tsetse fly's resistance underline the need for more research to find effective solution.

Mostly expansion of farmland takes place spontaneously as farmers move into forests and grazing areas. Farmers are also gradually switching to permanent cultivation, especially in Africa and are reducing fallow periods. In the rare instances of extensive virgin areas with goodwill—North Western Brazil for example—migration is taking place on a large scale. It has significantly boosted output in Brazil, Thailand and the Philippines. Even in recent times, migration has been the major, often the only source of agricultural growth in sub-Saharan Africa.

The advantage of spontaneous settlement is that it is cheap and the costs are borne by the settlers themselves. People do not always have the assets or the incentive to move, however, in countries where land is available. Some Governments have sponsored settlement schemes—for example in Malaysia and in the outer islands of Indonesia. Generally, such schemes are expensive. They typically cost $1000 to 2000 per hectare for clearing land and providing roads, markets, schools and health facilities.

Irrigation—A pre-requisite

Irrigation has made the largest contribution to increased agricultural production in much of Asia, North Africa and the Middle East. Investments for irrigation have risen dramatically in developing countries, to around $15 billion in 1980. The irrigated area has grown by 2.2 per cent a year since 1960. Some 160 million hectares, one-fifth of the harvested land in developing countries is now irrigated. This land area uses about 60 per cent of all fertiliser and produces over 40 per cent of all annual crops in the developing world. Between 50 and 60 per cent of the increase in agricultural output in the past 20 years has come from new or rehabilitated irrigated areas. China and India account for more than half the developing world's irrigated area. Irrigation absorbs a large part of public sector investment especially in low-income countries. To ensure a reasonable return on that investment, the system has to be carefully designed and organised and then fully used. Efficiency has become increasingly critical, partly because of actual or threatened water shortages. More important, modern high yielding seeds require reliable supplies of water at specified times if they are to fulfil their promise. In India and Sudan large canal schemes with storage reservoirs require an investment of about $2000 a hectare. Similar schemes in East and West Africa often cost more than $10,000 a hectare, the result of an inexperienced domestic construction industry and dependence on imported materials and equipment. Many existing irrigation systems suffer from water-logging and salinity because of lack of drainage, particularly in northern China, Egypt, northern India and Pakistan. More than half of the Indus Basin canal system in Pakistan, some 8 million hectares is water-logged and 40 per cent is saline. In addition to large public sector irrigation schemes, there has been a rapid expansion of private irrigation. In south Asia since 1960, farmers have invested about $ 15 billion in open wells and tubewells irrigating 30 million hectares. These private schemes supported by the public sectors provision of long term credit and rural electrification comprise as large an area as all public and private irrigation in North Africa, the Middle East and Latin America.

Elsewhere tubewell and pump irrigation has grown slowly, particularly in sub-Saharan Africa. Irrigation is not economic in much of sub-Saharan Africa though it is also constrained by inadequate water surveys and the lack of a supporting infrastructure. In parts of the Savannah belt of northern Nigeria, for example studies indicate that tubewell and pumping schemes would be economically justified. Though more expensive to operate and maintain than canal systems, pumps and tubewells often prove more effective because they can be managed more easily and the initial investment is much smaller.

Dry Land Farming

While irrigation has many advantages, the fact remains that rainfed areas constitute 80 per cent of the developing world's cultivated land and support nearly two-thirds of its farmers. Yield increases still depend on subtle interaction between soil, water, seeds, and sunlight but the process is not as well understood under rainfed conditions as it is with irrigated land. Local conditions vary so much that finding solutions is often costly and they can seldom be replicated elsewhere. Even with the current state of knowledge, however, there is scope for growth. New methods of tilling, new crop rotations, increasing use of fertilisers and pesticides, soil conservation and drainage—all have a part to play. Tackling the problems of rainfed agriculture is an increasingly important challenge in many countries, including some such as Mexico where irrigation has already been extended as far as possible. Soil erosion and declining fertility are the main threats to rainfed agriculture in the humid and sub-humid tropics. Tackling them requires protecting the soil by continuous coverage and minimum tillage as well as drilling seeds and controlling weeds. This kind of systematic approach is being developed as IITA in Nigeria. In the case of some Latin American countries, highly acidic infertile soils present a rather different challenge. There, research focuses on reclamation, now crop rotations and more effective means of fertilising the soil. In areas with relatively dependable rainfall and moisture retentive soil, ICRISAT in India is developing new cultivation methods. These are based on ma[illegible] permanent broad beds and furrows that provide [illegible]nage in heavy rains and improve the soil's capacity to retain moisture.

Together with pre-monsoon sowing, changed crop rotations, high yielding varieties and fertiliser, this approach has tripled output in farm experiments. If rainfed land could increase its yield by 500 kilograms per hectare, the total increase in production would exceed what could be achieved by a rise of two tonnes per hectare in the field of all irrigated land.

Need for Research

Low or negative growth in agricultural production per capita in South Asia and Africa presents a major challenge to domestic policy-makers and the international community alike. The unprecedented advances in plant breeding, in the use of fertilizers and in investment in irrigation over the past twenty years have resulted in a tie in the race between population growth and agricultural production in South Asia. In Africa, where no comparable advances in agricultural technology have been realised, the race is at present lost. The challenge is to accelerate the pace of biological innovation, to provide the policy environment and the complementary resources that make the new technologies effective in increasing output and incomes and to reduce the rapid rate of growth of population.

Chemical fertilisers were responsible for 55 per cent of the increased yields in developing countries from 1965 to 1976. But though fertiliser use has been growing in the developing world at an average of 10 per cent a year, total use is still low—a mere 24 kilogrammes per hectare compared to 115 kilogrammes in the developed countries. Growth is expected to continue at some 8.5 per cent a year with the main demand being for nitrogen fertiliser which unlike the other main types (phosphates and potash) does not accumulate in the soil. One of the main factors influencing fertiliser use is the so called fertiliser response curve. This has to be worked out through intensive research effort.

In the past, agricultural research relevant to developing countries, needs was confined largely to tropical export crops. Crops, such as cane sugar, have been through several Green Revolutions over the past century. In general, though, research has become critical only in modern times, it has been applied to considerable effect in countries such as China, India, Indonesia and the Philippines. Much remains to be done for crops growth in semi-arid areas and for rainfed annual crops generally. Although research is one of the cheaper investments that governments can make, it requires highly skilled people to direct it. Foreign assistance has played a major role in this area, especially through the establishment of international agricultural research centres and through the financing and initial staffing of national research efforts in poorer countries. Labour is the most plentiful and cheapest resource available in low-income countries, while capital is scarce and expensive. Using the rural work force for infrastructure improvement is an important means of converting labour into capital. Management is however, often the key constraint.

Investment

The developing countries must double their food production over the next 17 years i.e. by 2000 A.D. just to keep pace with population growth. The second Green Revolution will require huge amounts of money but perhaps more important, a large scale transfer of technology and managerial skills. How will countries pay for the new inputs? The way out of poverty is expensive and many lesser developed countries find themselves in a tight and tightening bind. Total aid concentrated specifically on agriculture by the developed countries is currently running at just under 5 billion a year. There is talk of doubling this to 11 or 12 billion, but the current mood in developed nations is towards a reduction of aid.

The terms of trade for many agricultural commodities from developing countries—in other words the purchasing power of their farm exports in terms of imports of machinery and capital goods—has tended to deteriorate over the past decade. The constant value of agricultural exports from the developing countries hardly rose from 1970 to 1979 from $18.7 billion to $21.7 billion (at 1969—71 prices) while in the same period the developed countries increased their farm exports from $ 24.6 to 39.8 billion.

In the light of these figures, it seems doubtful that the developing countries will be able to muster either internally or from foreign aid anywhere near the $1700 billion over 20 years—the FAO estimates is required to accelerate agricultural production.

Agriculture attracts a surprisingly small share of government spending—between 5 and 10 per cent of most developing countries central government budget. Nevertheless, public sector outlays on critical bottlenecks have helped to stimulate and sustain growth by the development of large scale irrigation, research and rural infrastructure. This approach has been particularly useful in areas where the potential for rapid growth already exists and special programmes often combine several elements into a development package. In some countries—Indonesia and Republic of Korea for example—fertiliser subsidies have been used to encourage growth. The effectiveness of such techniques should not disguise the fact that they can become very costly; removing them once they have achieved their objective can be difficult.

Earlier agricultural development in, for example, Argentina, Brazil, Malaysia and East and West Africa was largely based on private investment, often involving foreign management and control. Private foreign investment and loans are still important in some middle income economics. In the low income economies, little external private investment or lending has recently gone into agriculture. Instead, foreign aid has become the main external source of foreign exchange and technical support particularly after 1973.

In the mid-1960s, while nearly a quarter of all official development assistance (ODA) was food aid ($1.4 billion out of $5.9 billion), projects and technical assistance for agricultural programme was small. The food crisis of the early 1970's coupled with a growing realisation that poverty and malnutrition were persistent problems in large parts of the world, produce a major shift toward agriculture. Flows of ODA and other official assistance for agriculture more than doubled in real terms between 1973 and 1980.

The share of agriculture and rural development in the lending of the multilateral institutions rose to nearly 30 per cent.

The share of aid in agricultural investment varies widely from country to country. In China, by far the largest country, virtually no external assistance was received during the past twenty-five years. Similarly in India, though large amounts of aid have been received, it represents only 3 to 5 per cent of total spending on agriculture. Its use is concentrated in selected areas such as irrigation and its effectiveness is largely determined by overall agricultural investment. Elsewhere, especially in the poorer African countries, aid accounts for 20 per cent of public investment in agriculture. There too, the effectiveness of aid still depends on the government's interest in and commitment to agriculture.

The need for policy and investment changes is not uniform among the developing countries. Many have been quite successful in managing their agriculture and adapting to structural changes. They need little advice, although they may need continued financial support to sustain well designed policies and programmes. Others need to make major changes. They are not alone. The developed countries have found it extremely difficult to manage the last stage of structural changes in agriculture; their capacity to deal more effectively with these challenges will be an important factor in developing countries' success or failure. □

(*Contd. from Page No.* 13)

and, therefore, they should discharge their obligations efficiently and with vigour of dedication. An atmosphere may be created by the employers and the employees themselves or even by outer agencies including the state government in which the industrial relations may be made congenial. Industrial relations thus play a vital role in the establishment and maintenance of industrial democracy. The problem is such that its solution depends on the historical development of industrialisation and national and cultural characteristics of a society. The field of industrial relations is thus one where readymade methods and solution can not be imported from other countries. The following fundamental principles may be accepted as objectives of social policy as adopted by the special committee of the Fourth Asian Regional Conference of the I.L.O. held in New Delhi in 1957 :

1. The good industrial relations depend on the ability of employers organisation and workers union to deal with their initial problems freely.
2. Collective bargaining through the assistance of appropriate governmental agencies is the corner stone of good industrial relations.
3. Workers organisations and employers associations should be recognised with the consideration of general public, social and economic measures affecting industrial relations.

Although these principles may be important in framing and establishing good industrial relations as a whole, every country has its own biases and problems and therefore, industrial relations should be maintained in that light. However, it is widely accepted that peaceful and harmonious industrial relations pre-suppose certain conditions such as, (1) laying down of fair labour standards by the state; (2) the realisation and urge on the part of employers for the promotion of their workers welfare; (3) opportunity of bargaining given to both the employers and employees on the basis of equality; and (4) the genuine sympathy of the general public towards labour.

In a final analysis the attainment of peaceful industrial relations does not rest with legislation. The relations between workers and management are human relations. This is just as hard as impracticable to prescribe iron bound rules for behaviour in dealings between labour and management as it would be for husband and wife. □

(*Contd. from Page No.* 14)

very selective and priority-bound plans of development, education, training and motivation of local people, pooling of all the resources and co-ordinated implementation of different rural development programme of various agencies.

The difficulties of the task are accentuated many folds by the widely varying degrees of approachability, resource and infrastructure availability, market facilities and levels of growth of different areas in a state and as between different states in the country. Education, skills and entrepreneurship availability is more or less related to the extent the aforesaid advantages are available in an area. Thus resources for development being limited over a period of time, priorities of rural development in industrially backward areas had to be related to the extent the aforesaid advantages are available, the best receiving the first priority, to ensure maximum immediate results and ultimate returns in the form of operation of models for other areas to follow and to gain time till infra-structure and various advantages in other areas came up.

Conclusion

Rural industrialisation through decentralised concentration of efforts for developing a heirarchy of growth-centres envisaged a multi directional development of resources services, and infra-structure which formed the base for a co-ordinated agro-industrial development. It requires an all round development of transport, communications, power, agriculture, irrigation services, markets, etc. The Industrialisation also requires correct appraisal of problems, all pervading planning with continuity and consistency, intensification and co-ordination of the efforts of various industrial and other developmental agencies at different levels, education and training of the villages (particularly the artisan) and his motivation, development-orientation of rural banking, extension of appropriate technology and relevant research, tenacity and consistency in implementation and placement of knowledgeable, dynamic and dedicated officers and staff at vairous levels and their encouragement by recognising and rewarding length of satisfactory performance. Moreover this extremely complicated, difficult and phenomenal task required considerable time to yield the desired results. □

Prevention of allergic diseases

Zafar Jamal

The word allergy means altered reactivity. The allergic diseases are caused by exaggerated or distorted immune responses. These diseases can involve any part of the body. In this article, the author has attempted to explain the causes of the diseases and the prevention measures to avoid them.

THE WORD ALLERGY simply means altered reactivity and it came to have a technical meaning when in 1906, Venpirquet, for the first time, proposed it to denote those conditions where certain individuals react to various stimuli in a manner different from the normal responses of the majority of people However, the present concept is that allergic diseases are caused by exaggerated or distorted immune responses. To grasp the significance of this concept, we will have to understand immunity.

Human body has to cope with a variety of extrinsic and intrinsic challenges, some of which are powerfully lethal. These foreign challenges can be of any nature; physical, poisonous, cancerous and of course, all sorts of infections—viral, bacterial, fungal, parasite and so on. Nature has, therefore, endowed us with elaborate defence mechanisms to ensure our survival. These defence mechanisms can be broadly classified into non-specific and specified. The non-specific innate responses are inherent into an individual's constitution. Majority of the above named challenges can be tackled with the non-specific defence apparatus. However, when there is danger that the non-specific defence mechanisms are likely to be overwhelmed, adaptive defence mechanisms come to our rescue. The adaptive defences are very potent, recruiting all the resources at the disposal of human body and then organising them in such a precise manner that the offending agent is specifically, and, therefore, effectively dealt with. These adaptive defence mechnisms have been given the technical name of immunity. All such diseases caused by the failure of immunity mechanism are called allergic diseases, which can be identified in most cases by difficult respiration or skin rashes. There are other symptoms too, but these are most common.

Allergic diseases

Allergic disease can involve any part of the body. Skin, ears, eyes, nose, air ways of the lungs and the intestinal tract being in touch with external environment are more likely to suffer from allergic diseases.

Susceptibility to allergic diseases is present in about ten per cent of general population. Important allergic diseases are the allergy of the nose called Allergic rhinitis, allergy of airways of the lungs called bronchial asthma and allergy of the skin called atopic dermatitis or allergic eczema.

When internal lining of the nose is affected by allergy it can be recognised by some peculiar symptoms. The patient gets bouts of sneezing, profuse watery nasal discharge, at times obstruction of the nose, itching of the nose and eyes and tears like discharges from the eyes. Often dull headache and mild irritation in throat are also present.

Bronchial asthma, that is allergy of air passages in the lungs, manifests itself as periodic attacks of breathlessness associated with hacking cough without sputum. The sputum, if present, is very sticky and difficult to bring out. Usually the patients feel completely normal in between the attacks of asthma.

The skin allergy is chronic and hereditable and appears as a distinctive form of eczema with itching and irritation. In infants it usually affects the cheeks; in children the folds of elbow and knee joints; and in adults specially in housewives, the hands and feet where it causes dermatitis.

Some people are specially susceptible to allergic diseases. The cause of susceptibility is believed to be hereditary and constitutional. This susceptibility can be provoked by a veriety of factors namely infections, exercise, drugs, allergens, and psychological factors.

Infections

Infections which are mostly viral and not bacterial may initiate attacks in certain individuals, but strangely enough antiviral vaccine does not prove effective. Perhaps effective antiviral vaccines for most of the viruses are not available.

Exercise is usually beneficial in asthmatic persons. But in some persons, exercise induces attacks of breathlessness, sneezing and itchy eruptions on the skin. Such patients should avoid strenuous exercises.

Certain drugs like aspirin and other painkilling medicaments, penicillin and many antibiotics, can also produce severe, even fatal obstruction of the breathing passages. Many chemicals used as food additives such as colouring agents, preservatives and others can also induce allergy.

Psychological factors

Psychological factors are probably responsible for some attacks. It has been found that the severity of attacks can be either worsened or alleviated by suggestion.

The allergens are the factors that erupt allergy in susceptible individual. The common allergens can be categorised into four main groups :

Inhalants like house dusts, occupational dusts, pollens, fungal spores, insect debris, animal dandruff etc;

Ingestants like some foods, drugs, and chemicals;

Contactants, such as dyes, drugs, cosmetics, soap which cause skin allergy;

Injectants like penicillin, liver extracts and others.

Sting of certain insects like wasp, honeybee, can also at times lead to severe or even fatal attack of allergy in susceptible persons.

Among inhalants pollen is a seasonal cause, while various kinds of dust and fungal spores are perennial. It is interesting that fresh dust is not allergenic while stagnant dust is highly allergic. Mites which are very small insect like organisms being hardly visible to the eyes, grow in the damp and dark environment in the house dust feeding on human skin scales. These house dust mites are now known to be mainly responsible for the allergencity of stagnant dust. Certain mites grow abundantly in the dust of stored foodgrains like wheat, rice and pulses. These dusts are also highly potent as allergens and have been found to be a potent factor in provoking attacks of asthma especially in housewives and rural populace.

Thorough examination, a must

In order to know the importance of various factors and also to arrest the potentiality of numerous allergens with which the patient comes in contact, a thorough, interrogation of the patient regarding his occupation. hobbies, and domestic environment is an absolute must. It is important to know whether the attacks are related to some particular season, or whether they are perennial or just occur irregularly without any relation to season. Once the culprit allergens are suspected, the hard evidence is obtained by various sophisticated tests which can be performed by the specialist. The results of allergy testing must be correlated with the history of the patient to arrive at a definite conclusion.

The management of these allergies includes :

Treatment of the attacks with suitable drugs;

Environmental control;

Immunotherapy or hyposensitisation;

Environmental control of specific factors, determined by history and allergy testing should be attempted, if and when possible by the removal of domestic animals or pets from the environment. Other sources of animal allergens in the home are feathers, stuffed toys, upholstered furniture, blankets, carpets and pads and degraded fibre of vegetable products such as kapok and cottonseed found in pillows, mattress and furniture stuffing. Household cleaning should be done if possible when the patient is not present. Cut flowers should not be brought into the house. Potted plants should also be avoided as natural source of moulds. If definite allergy to some food items has been established, it must be eliminated from the diet.

These are some preventive measures which the patient himself can adopt when he comes to understand the nature of allergy. But if the symptoms are of moderate or severe intensity and cannot be controlled with these preventive measures recourse should be had to immunotherapy under the strict control of the specialist. The patients should remember that the therapy is not a cure but only an attempt at reducing the sensitivity to the various allergens. □

(Courtesy : All India Radio)

National plan for cancer control to be adopted

A National Plan for the control of cancer will be formulated by the National Cancer Advisory Board, set up by the Centre. This was announced by Kum. Kumud Joshi, Dy. Minister for Health and Family Welfare while speaking to members of the Standing Committee on Teletherapy Units and the Core Committee of the National Cancer Advisory Board in New Delhi recently. The Minister emphasised the need for the formulation of a comprehensive plan for cancer treatment and detection and its inclusion in the Seventh Plan.

Success or failure of development schemes

K. Radhakrishna Menon,
R. Ganesan and
J. Sadakadulla

Success or failure of any development scheme depends more on how well the people understand the benefits of the scheme and to what extent the benefits statisfy their needs. To attain this, educational efforts by scheme officials must precede the implementing stage and follow-up visits and discussions with beneficiaries, say the authors.

IT IS NOT uncommon that one and the same scheme proves very successful in some areas, but not so in other places, even within a district. The 'Why' of this phenomenon, if investigated thoroughly into, can help the administrators of schemes to understand the factors that decide the outcome of the schemes. Though evaluation studies of different development schemes have been conducted in large numbers, studies to understand the 'Why' of the success or failure of one and the same scheme in two different areas are very little or even nil. So it was thought that such a study would be useful to bring out the deciding factors for the success or failure of the development schemes. With this in view the study was undertaken with the following specific objectives :

(i) to study the awareness of beneficiaries regarding the objectives of the scheme.

(ii) to study the attitude of beneficiaries towards the scheme in respect of its benefits to them.

(iii) to find out the factors contributing to the success or failure of the scheme.

The study was conducted in Sivakasi, Aruppukottai, Rajapalayam and Kamudhi of Ramanathapuram district where in Drought Prone Area Programme (DPAP), a special programme for backward areas is functioning. Two DPAP schemes, one of agriculture viz., dryland soil and water conservation scheme and another of animal husbandry viz., milch animal distribution scheme were taken for study.

The analysis of data revealed that the awareness of the schemes among the people in the study areas is good. However their attitude about the schemes implemented and what they do towards these schemes differed.

While in the success area, majority of the beneficiaries (50 per cent) are having a favourable attitude towards the dryland soil and water conservation scheme, majority of the people in the failure area had unfavourable attitude towards this scheme.

But in the case of milch animal distribution scheme in both the areas, the people had favourable attitude only. The study revealed that the following factors contributed to the success of any development scheme in an area :

(a) Interest on the part of the officials both in the implementation and follow-up stages of the scheme.

(b) People's conviction about the suitability of the scheme to the particular area.

(c) Infrastructural facilities to support the scheme.

(d) Availability of inputs to sustain the scheme.

(Contd. on Page No. 33)

Gram swaraj no more a dream

G. Nageshwara Rao

PANCHAYAT RAJ was introduced in Andhra Pradesh in 1959 with the idea of developing local leadership in villages, improving local resources without depending too much on Government and catering mostly to the long felt needs of the people. Till the end of 60s' tehre was enthusiasm all around and many self-help-programmes were taken up. Even offering Shramadan to improve facilities in villages was common. This became a routine rigmarole later and lost much of its punch and drive. Further there were no elections for a period of nearly 12 years.

Two years ago when elections were held for all the Panchayat Raj Institutions, there was renewed enthusiasm and mostly the young persons came to power in many Panchayats. One such example is a tiny Panchayat "Varadarja Puram" in Gangavaram Samithi in West Godavari district. In this village election of the Sarpanch has been unanimous all along so far. Mr. R. Lakshmipathi Raju, a youth of 25 was elected as Sarpanch. He was determined to make his village self-sufficient. The village has a population of 1,000. The farmers here grow only high yielding varieties. When Mr. Raju was elected, the income of the Panchayat was Rs. 13,000.

Brisk activity

After Mr. Lakshmipathi Raju took over, there has been brisk activity in providing amenities in the village. Retaining walls and cattle ramps were constructed at the cost of Rs. 60,000 with assistance from P.W.D. A new hutment colony for SCs at a cost of Rs. 1 lakh was completed. Funds came from Samithi. Rs. 20,000 were spent on construction of culverts and approach roads to the SC cheri. A new Panchayat Office building at a cost of Rs. 10,000 is under construction.

There was an abandoned tank of 16 acres in the village which Mr. Raju recently renovated and converted it into a drinking water tank of 6 acres and fishing tank of 10 acres. The latter was auctioned for Rs. 17,000 for three years. The tank bunds are used for growing vegetables, papaya, banana and coconut. Mr. Lakshmipathi Raju says that if his plan of planting 700 coconut trees on the bunds of the tank is completed, the Panchayat would get an income of Rs. 70,000 annually and after the present lease period of the fish tank which is shortly coming to close, an annual income of Rs. 25,000 is assured on the fish tank. Thus making the Panchayat self-sufficient without depending on Government assistance. Starting of four piggery units for SCs at a cost of Rs. 60,000 is in the offing, he adds.

If more Sarpanchs take such initiative, the aim of establishing gram swaraj in the country can surely be achieved. ☐

First coir pith based industrial carbon plant

AN INDUSTRIAL carbon plant, based on coir pith and other coconut wastes, the first of its kind in the country, was commissioned recently at Arsikere in Hasan district in Karnataka. The production capacity of this plant is 12 TPD of liquid tar and 6 TPD of combustible gas.

This plant has been set up by the Karnataka State Central Coir Cooperative Development Production and Marketing Society Ltd., Bangalore at a block cost of Rs. 40.18 lakhs with NCDC loan of Rs. 26.11 lakhs.

At a time when the country is facing an energy crisis, this plant will provide an alternative fuel which could be produced by using renewable sources like coconut shells, coir pith, bagasses powder etc.

The Industrial carbon produced by this plant is used in industries manufacturing calcium carbide, activated carbons, silicon carbide, carbon tetrachloride, ferro-silicon etc. It is preferred by these industries due to its high quality content of fixed carbon, high density, low ash and negligible quantities of impurities like sulphur, phosphorus etc. This fuel is cheaper than wood charcoal or petroleum coke. It would prove more economical in the long run because the prices of wood due to scarcity and prices of petroleum products are constantly increasing.

Obviously this source of energy viz. industrial carbon from coir pith, is likely to be sizeable in future since coir pith is available in abundance in the country. ☐

Science & Technology Notes

Technology for Methylchlorosilanes

THE NATIONAL CHEMICAL LABORATORY in Pune has developed an indigenous technology for the manufacture of methylchlorosilanes, which are the basic material for the production of Silicones. This is the first time that this technology has been developed in India. Silicones are industrially important because of a unique combination of metallic and non-metallic properties. They are put to various uses, including softening and repelling in the finishing of textile and leather goods, protective coatings for insulators, adhesive, heat transfer media and anti-flatulent additives in pharmaceutical preparations. A Bombay firm, M|s. Hico Products Ltd., is producing methylchlorosilanes, based on the process of NCL, a laboratory of the Council of Scientific and Industrial Research. The firm has established a 1000-tonne-per-annum plant at Kharsundi in Raigad district of Maharashtra for this purpose. It represents a noteworthy example of fruitful collaboration between CSIR and industry.

Mobile Plant for Potable Water

The Central Salt and Marine Chemicals Research Institute, another CSIR laboratory based in Bhavnagar, has developed a plant for making saline water potable. It is electrically operated and is easy to handle. It reduces the total dissolved solids in the saline water by 85 to 90 per cent and costs about one lakh 20 thousand rupees. The plant has a capacity to produce 15000 litres of potable water in 24 hours out of impure, brackish water. The treatment cost is around Rs. six per 1000 litres. The process consists of a reverse osmosis technique. The plant is mounted on a van so that it can be carried around for demonstration.

Tiny Cement Plant for Cement manufacture

RRL JORHAT has developed 10, 15 and 20—25 tonnes per day vertical shaft kiln tiny cement plant designs to produce portland cement as per ISI specifications. The designs are available on turn key basis. Under a tripartite agreement signed between National Research Development Corporation of India (NRDC), Regional Research Laboratory, Jorhat (RRL, Jorhat) and M|s. Ganesh Industrial Service Agency (GISA), Gandhidham, GISA will offer consultancy service to prospective entrepreneurs on these tiny cement plants. Detailed design package of standard size would be offered. GISA will also guarantee the technical adequacy of the engineering design, performance of the integrated process and quality of the poduct as per ISI specifications. RRL Jorhat will render services for testing and evaluation of raw material samples of the prospective clients to ensure their suitability for manufacture of cement and advise on any modification required.

In a separate agreement, M|s. Laxmi Engineering Works, Udaipur have been authorised to fabricate for the prospective entrepreneurs vertical shaft kiln tiny cement plants of 10, 15 and 20—25 tonnes per day based on the RRL—Jorhat technology

Impairment of Eyesight due to Pesticide Spray

ORGANOPHOSPHORUS and inorganic arsenic pesticides are extensively used in India, in the national malaria eradication programme. The workers engaged in spraying are heavily exposed, because of long hours of work, faulty techniques, and ignorance about the potential hazards.

Some of the organophosphate pesticides are responsibe for high incidence of eye-defects—even blindness, in pesticide spray-men, according to studies conducted by the Neurotoxicology Unit of Industrial Toxicology Research Centre in collaboration with KG's Medical College, Lucknow.

Prolonged exposure of these agrochemicals led to high incidence of degeneration of macula in the retina of the eye. Macula—an irregular yellowish depression in the retina—is believed to be the site of absorption of short wave-lengths of light.

The study included 64 spray-men from a Malaria Eradication Unit who had sprayed organophosphorus pesticides usually 5 to 6 hrs a day. No protective clothing, face masks or gloves were used by these workers and there was a total lack of awareness on the part of the spraymen about the potential hazards of these chemicals. Fourteen subjects (22 per cent) in the age group 24—42 yrs. were found to have macular degeneration. Mean duration of exposure of these workers was 7 years. Visual impairment was observed in four workers (29 per cent); dislike of bright light in two, and night blindness, black dots in front of the eyes, and blurring of vision (one each). The corrected visual acuity was reduced to 6|9 or less in nine subjects (64 per cent).

(Courtesy: CSIR)

Largest Hydraulic Press in India

A 8,000 T 4-COLUMN, PUSH-DOWN Hydraulic Press supplied by West Germany was successfully commissioned in BHEL-Tiruchirapalli recently. Using this gigantic Press, the largest of its kind in our country, BHEL-Tiruchy will now be able to manufacture drum shells required for 500 MW boilers, upto 300 mm thick, 1.8 M diameter and 12.3 M long. The Press would also be used for making hemispherical dished ends, thick walled welled pipes, pipe fittings etc.

This Press will enable considerable foreign exchange savings, as all these products were hitherto being imported which will go a long way in meeting the country's power programmes

Economic Notes

Steering Group on Employment Strategy

THE PLANNING COMMISSION has set up a 15-member Steering Group on Employment Strategy with Dr. C.H. Hanumantha Rao, Member, Planning Commission, as Chairman.

The Steering Group will make an overall assessment of employment and unemployment situation at the national as also the State and regional levels including backward areas and hill|tribal areas, and separately for public and private sectors.

It will examine the progress of labour absorption particularly of educated manpower and women, in the organised and unorganised sectors by industry.

The Steering Group will formulate the elements of employment strategy consistent with the overall Plan objectives and consider the feasibility of evolving a time-bound plan for fuller employment by 2000 A.D.

The Steering Group will submit its report by 31st May, 1984.

Working Group on Medical & Health

THE PLANNING COMMISSION has constituted a 20—Member Working Group on Medical & Health Research and Development.

The Working Group will review the present position, progress and problems of medical research and development in the country.

It will suggest changes|modifications in the research programmes and priorities keeping in view the goal of achieving 'Health for All' by the year 2000 A.D...

The Working Group will identify the areas of research thrust and development of appropriate technologies and their application to strengthen the ongoing programmes.

Dr. V. Ramalingaswami, Director General, Indian Council of Medical Research will be the Chairman of the Working Group.

The Working Group will submit its report by March 31, 1984.

Progress of Adult Education in Tribal sub-Plan areas

The progress of adult education in the Tribal sub-Plan areas has shown a steady improvement in the first three years of the Sixth Plan.

The statewise coverage of Scheduled Tribes in the age group of 15—35 during the first three years indicates that the maximum coverage has been in Madhya Pradesh followed by Bihar and Maharashtra. While the total enrolment of Scheduled Tribes for the year 1980-81, 81-82 and 82-83 in respect of Madhya Pradesh is 3,04,213, it is 2,19,771 for Bihar and 2,18,948 for Maharashtra.

The coverage of Scheduled Tribes under the Adult Education Programme is nearly 18.4 per cent of the total coverage as against 7.58 per cent of Scheduled Tribes in the total population of the country.

A separate budget provision of Rs. 2 crore has been set apart for the year 1983-84 for the programme under the Centrally Sponsored Scheme of Rural Functional Literacy Projects.

Cochin Shipyard delivers Second Bulk Carrier

THE STATE-OWNED Cochin Shipyard has delivered the second ship M.V. Rathnadeep, a 75,000 out panamax class bulk carrier to M|s Ratnakar Shipping Co. of Calcutta. This ship was launched in November 1981. On her first voyage the ship will carry iron ore from Goa to Japan.

The first ship from this yard M.V. Rani Padmini. was delivered to Shipping Corporation of India, Bombay, in July 81 and she has been rendering satisfactory service since then. The third, fourth and fifth ships are in various stages of construction. Cochin Shipyard is the first of its kind in the country capable of building large sized ships of around 75,000 DWT capacity.

Refineries' Capacity Utilisation

ENERGY MINISTER, Shri P. Shiv Shanker has informed the members of the Parliamentary Consultative Committee of his Ministry that close monitoring of oil refineries has resulted in 92.2 per cent capacity utilisation during 1982-83 and, it was expected, that during the current year and in 1984-85 also, refinery capacity utilisation will be more than 90 per cent of the available installed capacity.

He has also informed that the cumulative refinery production in terms of crude throughout from April to September, 1983 was 17.15 million tonnes, an increase of over 6.7 per cent over the production during the corresponding period last year.

The present refining capacity of 37.8 million tonnes spread over 12 refineries, would increase to 45.55 million tonnes by 1984-85 after expansion of the Cochin refinery, the Madras refinery, the Bharat Petroleum Corporation refinery at Bombay and the Hindustan Petroleum Corporation refinery at Visakhapatnam.

Solar cookers, which were capable of saving at least 40 per cent of cooking energy, were now being sold in 12 States and Union Territories of the country and in the last 16 months, over 17,000 solar cookers had been sold under the scheme which was initiated in April, 1982.

Record Turnover By Dredging Corporation

THE STATE OWNED Dredging Corporation of India has been showing consistant improvement in its working results for the past 6-7 years.

The turnover of the Corporation has increased from 14.83 crore in 1976-77 to Rs. 37.07 crore during 1982-83. The Corporation has earned a profit of Rs. 5.37 crore after providing for depreciation of Rs. 4.46 crore and interest on long term loans amounting to Rs. 1.33 crore. The turnover for the year 1981-82 was Rs. 32 27 crore and for 1980-81 around Rs. 25.48 crore.

New Zinc Filter To Be Set up

FACT'S DESIGN and engineering consultancy division (FEDO) has entered into an agreement with Cominco Binani Zinc Limited for the design and implementation of their venture to set up a new zinc smelter at Binanipuram, Edayar replacing the existing one which has outlived its utility. The agreement was signed on behalf of FACT by Shri N. B. Chandran, Chairman and Managing Director, FACT and Shri R. Balachandran, Adviser and Shri B. R. Rai, President, Cominco Binani Zinc Limited, signed on behalf of the client. The project is estimated to cost around Rs. 25 crores to Rs. 30 crores. The job involves services like detailed engineering, procurement, site supervision and commissioning assistance for a host of plants and allied works. This is a major assignment in the non-ferrous metallurgical field which FEDO has secured. The project is expected to be completed in about 2-1|2 years' time.

Record Sales Turnover By RCF

THE Rashtriya Chemicals and Fertilizers Limited (RCF) a public undertaking under the Ministry of Chemicals and Fertilizer has recorded significant achievements in terms of sales, profit and production.

The company registered a record sales turnover of Rs. 264 crores in 1982-83 against Rs. 258 crores in the previous year.

The company recorded an increase of nearly 39 per cent in gross profit at Rs. 54 crores in 1982-83 against Rs. 39 crores in 1981-82. After allowing for depreciation, interest and adjustment for the prior period the net profit of the Company amounted to Rs. 22.5 crores.

RCF has declared a dividend of Rs. 6.3 crores to be paid to the Union Government for 1982-83 against previous year's dividend of Rs. 5.2 crores. With this, the total dividend amounts to nearly Rs. 22 crores since the incorporation of the Company in 1978.

PAU Soil Scientist Honoured

Dr. N. T. SINGH, Senior Soil Physicist-cum-Head of the Department of Soil Science of the Punjab Agricultural University has been awarded the Rafi Ahmed Kidwai Memorial Prize for the bennium 1980-81 in recognition of his outstanding contribution to research in soil science. The award which has been instituted by the Indian Council of Agricultural Research carries a cash prize of Rs. 10,000 and a medal. His researches on soil and water management are meritorious and of topical interest in India. He has made rich contribution to research on reclamation and management of salt-affected soils. Dr. N. T. Singh is also a member of the Punjab Land Use Board, Punjab State Environment Board and Punjab State Council for Science and Technology.

More Facilities For 100% E.O.U.'s.

CENT PER CENT EXPORT ORIENTED Units will now be permitted to take on rent or on lease machinery (either from a foreign country or from indigenous sources) to be utilised in the bonded premises for producing goods for exports. The machinery is then to be re-exported or disposed off after it has outlived its utility. The Board of approvers has since decided that in future individual requests may be considered on merits of each case.

GSFC Opens Up Several Lines For Assistance

IN PURSUIT of rapid and diversified industrial development the Gujarat State Financial Corporation (GSFC) has decided to open up several new lines of manufacturing for finance which were hitherto not being encouraged. The Corporation has decided to provide assistance for bulk drugs, mini cement plants, cement based units, polypropylene tubular films, reprocessing of plastic waste, manufacturing of aluminium utensils, high grade crockery manufacturing units through installing tunnel|shuttle kin, cold storages, cotton process houses and printing. The Corporation has also decided to assist new units of Mangalore Tiles as also screen printing units at Jetpur.

The Corporation has also removed the restrictions on 18 groups of SSI industries on merits *in backward districts* on the lines of Development Commissioner, SSI.

FAI Award For Dr. Dev

DR. G. DEV, Professor of Soils of the Punjab Agricultural University has been awarded this year's "FAI Silver Jubilee Award of Excellence" for the best work done by him in the field of fertilizer use research on phosphorus.

The award has been instituted by the Fertilizer Association of India (FAI) to promote research on the fertilizer use. Dr. Dev's share of award will be Rs. 2500 and a medal.

In 1977 also, Dr. Dev was awarded a prize by the FAI for his article entitled, "Responses of Different Crops to Sulphur Fertilization in Punjab" which was adjudged the second best research article published in that year.

Success Stories

Quick repayment ensures more loan

ABOUT 200 FAMILIES of a previously nomadic tribe called "Narikurayar" are living in an interior village of Karai situated in Alathur Block of Perambalur Taluk in Tiruchi district. The families cannot make both their ends meet out of the farm income. Their second source of income is from their traditional job of making necklaces of beads. In 1982 Perambalur Branch of Canara Bank granted 23 families a loan of Rs. 300 each under DIR scheme at 4 per cent interest. The families utilized the grant, made profit and repaid the entire loan well in time in single instalment. Now the Bank has extended the loan facility to 50 families at the rate of Rs. 1500 to each family to raise the hutments for their shelters.

S. Subramanian
Field Publicity Officer
Tiruchirapalli.

Smokeless Kitchen ensure bushgreen fields

THE BLOCK DEVELOPMENT OFFICER of Gadag had a difficult time convincing the people in his area about the multiple benefits of gas plant. His advice went unheeded.

The B.D.O. did not give up. He started motivating the women in the family. The punch line of his propaganda was to convince the women about the smokeless burner.

The result was Sri R. T. Tirlapur's wife almost went on a hunger strike until a gobergas plant was promised by her husband. After much grumbling Sri Tirlapur decided to install a plant. Out of the estimated cost of Rs. 9555 he got a subsidy of Rs. 2680. Now his wife proudly exhibits the smokeless burner. He is happy that all the dung and other waste material is used as manure for his fields.

Slowly more and more kitchens in Binkadakatti are going smokeless. Gobargas plant has come to stay.

K. R. Prahallada,
Field Publicity Officer, Dharwad.

Pondicherry's progress in health and family welfare

PROPORTIONATE TARGETS (April—September 1983) in Family Welfare and other health schemes of 20 point programme set apart for the union territory of Pondicherry have been exceeded.

Pondicherry has performed 2710 sterilisation cases against the proportional target of 2050. In IUD too, 107 per cent of the proportionate target has been achieved.

Under the Leprosy control programme 111 per cent of the proportionate target for detecting new cases and 96.5 per cent in respect of cases brought under treatment has been reached.

In the T.B. control programme the proportionate target under the cases detected and sputum examination of chest symptomatics at Primary Health Centres has been exceeded by 10 and 5 per cent respectively.

Regarding National Programme for control of Blindness Pondicherry has realised 108 per cent of the proportionate target of cataract operations for the period under review.

V. Govindaswamy,
Field Publicity Officer, Pondicherry.

Legal Aid restores conjugal rights of Radheshyam Jogi

TIMELY LEGAL AID under the 20-Point Programme provided to one Radheshyam Jogi of Nawada village in Bhind district in Madhya Pradesh restored him the conjugal rights with his estranged wife. Twenty eight year old Radheshyam Jogi is now a happy family man with his wife and two children.

The wife of Radheshyam Jogi left him along with their two children five years ago and had been staying with her parents at Babedi village. It was almost a case of separation leading the wedded family life to rocks

When Radheshyam Jogi knew about the 20-Point Programme and the provision of legal aid, he submitted an application to the District Legal Aid Officer, Bhind, on March 15 requesting for legal aid for restoration of his conjugal rights.

Radheshyam's application was processed and with the sanction of legal aid to him by the Bhind Distt. Legal Aid Committee a case was put up in the appropriate court. The case had come up for hearing and on humanitarian grounds the Sessions Court gave a verdict of compromise and confirmed the same.

The lady of the house of Radheshyam Jogi is happily back again at her home looking after her husband as well as children.

Family Planning no taboo for Gopalpura Muslims

FAMILY PLANNING, a national programme is no taboo for the eligible couples of the predominantly muslim village of Gopalpura in Mhow, tehsil of Indore district. Incidentally Gopalpura is also an ideal village (Aadarsh Gram) of the tahsil.

The village has 45 houses, of which 39 are of muslim families. With a population of 441, the villagers have opted for family planning on a large scale. In fact, it was Shrimati Zubeda Bai of the village who set the trend 25 years ago by voluntarily undergoing family planning operation at Indore. Her two daughters-in-law emulated her and voluntarily underwent family planning operation.

The Gopalpura village community's endeavour is to encourage voluntary family planning operations amongst hundred per cent eligible couples.

With all the village panchas elected unopposed Gopalpura thrives on consensus on every issue and thus achievement of the family planning target here could be taken for granted.

World Congress on machines and mechanisms to meet

(From our Correspondent)

OVER 500 DELEGATES from 36 countries are assembling in New Delhi to participate in the Sixth International Federation of Theory of Machines and Mechanisms (IFTOMM) World Congress beginning on December 15 in the IIT campus. This is the first ever Congress to be held in Asia. Nearly 340 papers relating to design, operation and maintenance of machines generally employed in key industrial sectors such as agriculture, textiles, power and transport industries are being presented during 51 sessions of the Congress. There are 24-members countries of IFTOMM. Membership is likely to go upto 30. In a "Kinematic Analysis of plan and spatial mechanisms" sessions, fundamental aspects of the choice of a configuration of a machine and its elements are to be discussed. In another session of "dynamics of machines and mechanisms" acceleration in machine parts which give rise to inertia forces etc. are to be discussed. In the sessions on "gears and transmissions", transmission method like belts, hydrantic system etc. are to be discussed.

The human locomotion system is of particular interest to bio-medical scientists, in devising machanical systems for physically handicapped persons. Different aspects of these are discussed in 'Bio-mechanisms' session. A special aspect of these, is operations involved in hazardous environments like nuclear installations. In the Western countries and in Japan, human labour is being gradually replaced for fatigue free accurate machining and assembling of machine parts by robots. These aspects are discussed in the session on "Robots and manipulators."

Another interesting session to be held during the Congress relates to "Vibration and noise in Machine". Machines running at high speeds generate vibrations and noise which cause annoyance to the operators and persons around and also decrease the machine life. Based on the vibration and noise emitted by a machine modern maintenance procedures are being devised using sophisticated instrumentation in power plants, transport systems etc. These aspects are being discussed during the session.

A major problem in the design and operation of high speed machines such as gas turbine engines is the rotor dynamic forces. These details are discussed in "Rotor dynamics" session.

During the Congress, there will be separate sessions on tribology, control systems, machine and system design, CAD and optimisation techniques. A special emphasis is given to teaching and experimental methods, which are being regularly updated throughout the world to keep pace with the modern developments and these are discussed in "Teaching and Experimental Methods" session.

IFTOMM is the premier scientific and engineering world body in the field of machines and mechanisms. The first World Congress was held in 1965 in Varna in Bulgari. During this congress an intenational coordinating committee was formed and the inaugural assembly was held in 1969 at Zakopare in Poland. IFTOMM world congress have been held in New Castle upon Tyrne in UK and Montereal in Canada.

Over 45 tractors, textile and power industries from India are participating in an industrial exhibition during the Congress to project India's progress in machines and mechanism. A book exhibition is also being held at the Congress.

The details were given by Prof. N. M. Swami, Director, Indian Institute of Technology, Delhi and Prof. J. S. Rao, Head of the Department of Mechanical Engineering, IIT Chairman of the IFTOMM Congress at a press Conference in New Delhi recently.

India International Trade Fair 1983

Yojana Correspondent

INDIA INTERNATIONAL TRADE FAIR, 1983 was held at Pargati Maidan, New Delhi from November 14 to 27, 1983. Organised by the Trade Fair Authority of India, IITF 1983, was inaugurated by the President of India, Giani Zail Singh on November 14, 1983. This was the fifth in the series of international trade fairs. The earlier fairs were Asia '72, IITF '79, IITF '81 and IITF '82.

As stated by the Chairman of the Trade Fair Authority of India, Shri Mohammed Yunus, in a press conference, the highlights of this year's IITF were participation of over 40 foreign countries The USSR participated in the Fair in a big way. He said that China and Pakistan, though invited, have declined to participate. The Chairman said that participation by the country's large industrial houses was in a small way. He maintained that big private industries were not interested to participate in a big way inspite of exhortation to them about the need for displaying their products and services in one place. The IITF '83 was richer in content due to the increased participation by foreign and Indian companies. The Indian sector was represented by 27 States|Union Territories, 19 Central Ministries|Departments, 35 Public Sector Undertakings and over 30 large and medium private sector companies Besides, the pavilion of the National Small Scale Industries Development Corporation also included a very large number of companies.

Theme on technical cooperation

The theme of the fair was "Technical Cooperation among Developing Countries" with special emphasis on communication because of 1983 being the United Nations International Year of Communications projected in the Fair through a separate Theme Pavilion.

Another highlight of the fair related to maintenance of restaurants in most of the pavilions of States|Union Territories to represent India in respect of their respective cuisines. Another highlight related to introduction of daily attractive lottery prizes, of scooters, cycles, cash etc. on entry tickets awarded on every alternate day. This was a device to attract more visitors. The Children's Day was observed to mark Jawaharlal Nehru's birth-day on November 14 with on the spot paintings by them on that day. In addition, there was children's amusement gallery, a new point of attraction.

About four million people including Indian businessmen and overseas trade delegates visited the fair with an estimated business deals to the tune of Rs. 1500 crores. During the last two IITFs, Rs. 1300 crores worth business including Rs. 900 crores in 1982 were dealt with.

Socio-cultural activites

Once again Pragati Maidan, was full of life with eight auditoriums active every day and more than 12 cultural troupes representing different regions of the country thus providing a peep into the various facets of India's socio-cultural activities. In addition, 16 national award winner films were also shown. With the IITF '83, India has qualified to become a member of the International Trade Fair Organisations. Now every IITF would be held for 10—15 days in keeping with the international norms.

The IITF '83 also provided a spectacular visual of India's potential in trade, commerce, science and technology to the visiting members of the Commonwealth Heads of the Government Meeting which began in New Delhi on November 23, 1983.

An important feature of IITF '83 related to seminars conducted during the fair on seven interesting topics by TFAI. These were : 'Technological Cooperation among Developing Countries', 'Trade and Economic Cooperation with Commonwealth Countries', 'Role of Small Scale Sector in Export Development', 'Export Perspective in 80's', 'Foreign Investment Opportunities in India'. 'Commonwealth Conference on Small Enterprises' and 'Indo-German Trade and Economic Cooperation'.

(*Contd. on Page No. 40*)

All India performance of 20-Point Programme during first half of 1983-84

M. Yunus Siddiqui, YOJANA Correspondent

ALL INDIA implementation of the 20-Point Programme, as evaluated and analysed by the Planning Commission, has recorded 'Very Good' performance in respect of tree plantation, setting up of bio-gas plants, allotment of house-sites and provision of drinking water during the month of September, 1983. The target achieved in tree plantation was 88.1 per cent, bio-gas plants 47.3 per cent, house-sides 42.9 per cent and drinking water 36.3 per cent.

The working of National Rural Employment Programme (NREP) and distribution of surplus land has recorded 'Good' performance with NREP achieving 32.4 per cent of the projected target and surplus land 28.2 per cent during the said month.

The implementation of Integrated Rural Development Programme (IRDP), Special Components Plan for uplift of Scheduled Castes and Scheduled Tribes families, slum population, provision and energisation of pumpsets, sterilisation, construction assistance, release and rehabilitation of bonded labour, electrification of villages and EWS houses recorded 'Poor' performance, during the month under review, with IRDP achieving 27.8 per cent. SC and ST families 25.9 per cent and 25.1 per cent respectively, slum population 25.1 per cent; pumpsets 24.8 per cent, sterilisation 21.6 per cent, construction assistance 20.6 per cent, bonded labour 18 per cent, villages electrified 17.7 per cent and EWS houses 9.5 per cent of the projected targets.

Criteria evolved

To evaluate the performance of the 20-Point Programme, the Planning Commission has laid down standards of performance from September, 1983 onwards. The Commission has laid down the criteria for achieving 50 per cent of the targets on the assumption of uniform progress of the programme in all months of the year. However, allowing for a general build-up in achieving targets, for expressing the performance of September, 1983, the Commission has adopted standards of 'Very Good' with 35 per cent and above achievements of the targets, 'Good' with 28 per cent to 35 per cent achievements ot the targets and 'poor' with below 28 per cent achievements of the targets. These gradations of performance have been done on the basis of the evaluation made and criteria laid down by the Planning Commission.

The monthly reports for September, 1983 have been received from 19 States and eight Union Territories. The reports from Andhra Pradesh, Nagaland, Tripura and Mizoram have not been received.

Targets And Performance

All India performance in terms of annual targets for the year 1983-84 and achievements from April to September 1983 in IRDP have been 849.62 thousands with 27.8 per cent achievement against an annual target of 3053.85 thousands; provision of 1042.92 lakh mandays in NREP with 34.4 per cent achievement against an annual target of 3215.53 lakh mandays; 80.24 thousand acres in the distribution of surplus land with 28.2 per cent achievement against an annual target of 284.18 thousand acres of land; release and rehabilitation of 5190 bonded labour with 18.0 per cent achievement against an annual target of 28804; uplift of 6.46 lakh Scheduled Castes families with 25.9 per cent achievement against an annual target of 24.94 lakh S.C. families; uplift of 1.91 lakh Scheduled Tribes families with 25.1 per cent achievement against an annual target of 7.63 lakh; provision of drinking water in 17746.00 villages with 36.3 per cent achievement against an annual target of 48846 villages; provision of house-sites to 3.75 lakh people with an achievement of 42.9 per cent against an annual target of 8.74 lakh; construction assistance to 1.14 lakh people with 20.6 per cent achievement against a target of such assistance to 5.56 lakh people; amelioration of 5.31 lakh slum population with 25.1 per cent achievement against a target of 21.20 lakh slum population; provision of EWS houses to 0.38 lakh people with 9.5 per cent achievement against a target of provision of 4.05 lakh such houses; electrification of 4187 villages with 17.7 per cent achievement against an annual target of electrification of 23631 villages; 0.91 lakh pumpsets provided and energised with an achievement of 24.8 per cent against an annual target of 3.68 lakh pumpsets; 198.28 crores of tree plantation with 88.1 per cent achievement against the annual target of 225.00 crores tree plantation; setting up of 23628 bio-gas plants with 47.3 per cent achievement against the projected annual target of 50000 bio-gas plants; sterilisation of 12.56 lakh persons with 21.6 per cent achievement against a target of 58.12 lakh sterilisation; provision of 271 Primary Health Centres (PHCs) with 66.9 per cent achievement against a target of 405 PHCs; setting up of 2660 Sub-Centres with 29.5 per cent achievement against a projected annual target of 9010 sub-centres; and introduction of 193 ICDS (Instegrated Child Development Scheme) with 96.5 per cent achievement against an annual target of 200 ICDS.

This analysis report includes information in respect of Andhra Pradesh, Nagaland and Mizoram upto August 1983 and Tripura upto July 1983.

New sanctions

The Planning Commission also sanctioned 271 Primary Health Centres (PHCs), 2660 Sub-Centres and 193 ICDS Blocks during September 1983. □

(*Contd. from Page No.* 30)

Trade and Economic Cooperation

Trade fairs and exhibition are major elements in any effort of market development. The Trade Fair Authority of India was set up in March 1977 to spearhead and coordinate India's efforts in the field of market development. Today as a nodal agency for organising fairs and exhibitions abroad and India's participation in such events overseas, TFAI mounts an impressive programme to project India and Indian industry with its products, services and technology to the world. Four thousand trade fairs are held worldwide throughout the year. Of these 2000 such fairs are held in Europe alone. Fairs provide opportunities for business in a short span of time and at a minimal cost. In consideration of this, participation in the efforts of TFAI by trade, commerce and industry of the country will help India project its potential fully, thus helping the national economy emerge stronger.

Total expenditure on the maintenance of TFAI is Rs. 56 lakhs annually with 100 officers, 400 clerks, 150 security personnel and 100—150 casual staff occasionally for fairs. The trade fair complex is spread over 150 acres of land and is rightly known as Pragati Maidan representing India's march forward in science, technology, trade, industry and above all, prosperity. □

(*Contd. from Page No.* 15)

The channel from the state level to the central level should carry the information regarding the results of concurrent evaluation and the attendant problems. The extent of achievement of the programme objective should form the main content of this communication from the IRD Department in the State to the Centre. Exceptions should be kept to the minimum.

Impact evaluation which may be undertaken by the Centre is of long range interest and goes beyond the programme objective as mentioned earlier. It is, therefore, not considered here.

Thus, the information flow differs in content at different stages and travels for the minimum distance required.

It will be seen that the selectivity feature is designed to counter and curb the present tendency of cloying and choking the information channel resulting in non-utilisation|under-utilisation.

Frequency

For several reasons, the information flow should be more frequent at the lower levels than at the higher levels. In order to facilitate 'nipping in the bud', problems of input monitoring should be reported more frequently than those of output monitoring and concurrent evaluation. Moreover, in the chronological sequence, activisation of inputs occurs first and is followed by achievement of output later and by achievement of effect still later. Consequently, outcomes like 'output' and 'effect' which take more time to occur need not be reported very frequently. They should be given the reasonable time required for their occurrence and frequent reporting will not serve any purpose. In view of this, it is suggested that the frequency of reporting, particularly through statistical returns, may decrease as we move from the field level to the higher levels. For instance, results of input monitoring may be communicated by the block to the district every month. But it will suffice if the results of output monitoring are conveyed by the district to the state once in a quarter. The results of effect evaluation need be sent by the State to the Centre once in six months. This reduced frequency of the information flows at top levels enables the decision makers and policy framers to digest and utilise the information.

Other aspects of the reporting system like checking of the work (monitoring|evaluation) done at one level by the next higher level on a sample basis and reporting the results to further higher levels are not dealt with here. □

Reader's Forum

Dear Sir,

Never before have I written a letter to any magazine or newspaper, but Mr. Mohamed Fazal's logical article 'Industrial Growth in the Eighties' has compelled me to write this letter. To begin with I wish to congratulate, Mr. Fazal for bringing logical industrial business policy to public notice.

Once again thanks to Yojana and Mr. Fazal for the excellent article.

Yours etc,
Manoj Saxena,
Jt. Secretary,
Uttar Pradesh Youth Congress (I)
20 Point Programme Implementation,
Committee, Lucknow.

Dear Sir,

I went through your article "Public Sector Enterprises—Objectives and Performance" by Shri Mohd. Talha Siddiqui in the Sept. 1—15 Issue of 'Yojana'.

I found it rather difficult to understand the logic of linking the changes in the public sector financial outlays, for the Sixth Five Year Plan, with the performance of the public sector enterprises. Public sector outlays and investments in Public Enterprises as you will agree with me are two separate entities and not necessarily correlated.

Yours etc.,
Prof. Ravi. K. Zutshi,
Sr. Consultant (PAD),
Planning Commission.

Dear Sir,

With reference to the Sept. 1—15, issue of YOJANA, this year, I would humbly request you to go through the article titled "Family Planning Programme Goes through many Vicisstudes" printed on outer back corner.

It is mentioned in para 4 that "the Government has adopted terminal and spacing methods with greater emphasis on the latter." And in para 6, that "A total of 10.6 million i.u.d.s. insertions were effected upto March 1983."

As per latest researches by Americans into side effects of IUD insertion and reported in the "Science is The News" of the Voice of America programmes recently, IUD cannot and should not be recommended to women who are of child bearing age and still have one or two children.

It is reported that IUD methods may cause cesveal disease. So it is without option that one can only use IUD in women who have already planned their family and wish to have no more children.

Further information can be had from American (USIS) officials on demand. We hope that the 10.6 million IUD insertions in the current year are only in terminal cases.

Yours etc.,
T. Ghosh
Gunomy Colony,
Jamshedpur.

Dear Sir,

I am regular subscriber of your esteemed fortnightly Yojana. I have gone through the article on 'UNCTAD VI utter disappointment over meagre results' (Sept. 1—15). This topic is very helpful for the students of economics. I am greatly impressed by the topic 'Regularisation Vs Deportation' (Sept. 16-30)

I congratulate you and the authors for very informative and useful efforts.

Yours etc.,
Suba Singh Thapa,
Vill. Nanak Pur,
DT. Kapurthala (Pb.)

(*Contd. from Page No.* 23)

(e) Proper appraisal of the benefits of the scheme to the people through educational efforts prior to the implementation of the scheme.

Infrastructural Facilities

Among the aforesaid factors, infrastructural facilities of the area are an important determinant for success or failure of the development schemes. To provide evidence for this fact, the success of the dairy scheme in Rajapalayam was due to the presence of a well established dairy industry to which the beneficiaries of the scheme could sell their milk at a reasonably high rate without difficulty. But in Kamudhi area, the beneficiaries were put to difficulties in disposing of their milk. With the result, the income they realised was little. The fodder scarcity in Kamudhi area also acted as a deterrent to continue the scheme by the beneficiaries. Hence it is imperative to consider the infrastructural facilities available for the particular scheme before it is launched in any area.

It is implied from the study that the success or failure of any development scheme depends more on how well the people understand about the benefits of the scheme and to what extent the benefits satisfy their needs. To attain this, educational efforts by scheme officials must proceed the implementing stage and follow-up visits, discussion with beneficiaries and like during the different stages of execution of the scheme will help to achieve the best results.

At this juncture, it is to be noted that the Government of Tamil Nadu has recently issued orders to conduct a household survey in all the 378 Panchayat Unions to determine the number of families living below the poverty line under the Integrated Rural Development Programme. Indeed it is good to reach the weaker sections at their door steps. While undertaking such surveys, it would be worthwhile to educate the rural masses by the field investigators, whomsoever they may be, about the theme of different development schemes implemented in their area, how the scheme objectives are related to the local needs and how important their participation is in such schemes so that need based strategies can be formulated for them in future ☐

Books

Economic Viability of Small-farmers

DEVELOPMENT SCENARIO : INDIA—By Santikumar Ghosh, Published by the World Press, Calcutta, 1983. Pages 118

IN THIS SMALL BOOK the author has given his views on a number of economic issues which are critical in the Indian context. The issues dealt with are rural economy, financing plans, price stability, unemployment, public sector and so on.

The focus of the analysis on rural development is on economic viability of small and marginal farmers by means of providing them with services of all kinds, rather than subsidies. "Rural development vitally depends on the creation of durable rural infrastructure in irrigation, roads, etc., to support and sustain development of agriculture. There can be no modernisation of agriculture without roads and markets that would ensure the smooth inflow of inputs into the farms and the outflow of their surpluses."

The author observes that over recent years developmental expenditures for the country as a whole have not registered any significant rise. Private savings coming mostly from the household sector have been turned into public consumption in the form of non-development expenditure. On inflation, the author has described the pricing policy and mechanism as obtaining in socialist countries. But there is no indication of how these could be adopted in India for evolving a semblance of price stability.

The contribution of tiny and unorganised sector in employment in urban areas has been estimated between 35 to 65 per cent which is a very wide range of estimation. Apart from delineating on the causes of unemployment, the book has little to offer by way of solutions. The author sees public investment in crucial areas as indispensable for the national economy. "Apart from its role as a pace-setter to the development of the economy, the public sector should be looked upon as an engine of accumulation in the years to come."

Navin Chandra Joshi

Profiles Of Rural Rajasthan

Deogarh's Profiles: (Rural Development for Rural Poor) by T. K. Moulik and others, Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad (CMA Monograph No. 93).

INDIA, being predominantly rural, any effort at development must in the first instance be an attempt at rural development. The work under reference is an attempt to suggest an action programme of package of economic activities and to examine organisational patterns, with particular reference to Deogarh's development plans. Deogarh is one of the seventeen tehsils of Udaipur District Rajasthan.

The physical features, infrastructure, social, political and economic structure, quality of life and development administration of Deogarh is delineated so that inferences could be drawn. The work has brought out that only 19 per cent of land area is cultivable and the land settlement pattern still reflects the Jagirdari system. The occupational structure over the decades has not changed in as much as 70 per cent is still accounted for by agriculture and animal husbandry. The "district" still serves as the basic administrative unit despite efforts to decentralise further and the problems of coordination of different fields agencies continue, aggravated by lack of coordinated approach at tehsil-level. The monograph sums up that what is needed is decentralisation of development activities so that benefits accrue to the needy and has pleaded for attention being paid to enlisting of support of dedicated field-workers and adoption of a multiple approach to economic development through a package of activities like conservation of water resources, better farm practices, improved health and educational facilities, etc.

The work, with the help of a case study of Deogarh, has drawn conclusions which are of relevance to all planners in seeking to know the outcome of various plans. Hence, this work merits a perusal particularly by area planners and those responsible for implementation of various development programmes at the district level.

R. C. Srinivasan

Performance Appraisal

Management of performance appraisal; by Dr. M. L. Monga, Himalaya Publishing House Bombay—pp. 243, Rs. 80.

DR. MONGA has been writing over years on industrial relations, human resources and related topics. The title under review, divided into seven chapters, studies human growth, appraisal system, monitoring, potential appraisal, post-appraisal etc. with an important 'Survey Questionnaire' appended The Questionnaire may well be used for further depth-study. With the growth of rapid industrialisation the need for expert management along with the guidelines set forth in the book cannot be over-emphasized. Management, instead of being feudalistic in approach and based on bossism, should be oriented towards handling employees and their deployment; conflict and confrontation should be rung out to usher in cooperation and goodwill in the larger interestes of the country. Appraisals serve to monitor the efforts of the individuals, to integrate and coördinate individual efforts into a cooperative endeavour, to provide protection and feedback to the individuals, and, besides, to correct and commend the efforts. An appraisal implies (a) intuitive approach on the part of the employer, (b) a tendency on the part of the employees for a look-in, (c) group-approach, and (d) taking stock on the results achieved.

The book is quite readable and useful.

T. C. Rastogi

Opening fair price shops: target exceeded

GOVERNMENT endeavour to provide essential items to the consumers at Fair Price Shops under the new 20-Point Programme has shown good performance during the first five months of 1983-84.

Country-wide figures showed setting up of 9,000 new Fair Price Shops against the annual target of 7,722 which is 117 per cent achievement. Bihar reported opening the maximum number of Fair Price Shops (3871) in five months followed by Andhra Pradesh (1715) and Uttar Pradesh (1211).

Government has provided Rs. 7 lakhs in the current year's Plan consumer protection measures. Out of this Rs. 5 lakhs is being paid as Governmental assistance to voluntary organisations for promoting strong consumer-protection movements in the country. Nearly Rs. One lakh was distributed in the first quarter itself.

There is a welcome reaction in the industrial circles about the extension to the year 1983 of the period for re-endorsement of industrial licences and registration certificates on the basis of their past production in any of the five preceding financial years up to 1981.

The Government had already exempted industrial products from licencing where investment in fixed assets, land, buildings, plant and machinery does not exceed Rs. 3 crores, provided the products are not reserved for small scale or public sector and the industry is not subjected to special regulation or capacity constraints.

But now it has decided to raise investment limit for the purpose of licencing from Rs. 3 crores to 5 crores in view of the general escalation of production costs in the last few years.

In order to start industries in hitherto non-industrial, undeveloped areas, the Government have made special provisions for notified backward districts and areas to give them preferential treatment. It has declared 118 districts in the country as "No Industry Districts" and "special regions" which comprise category "A". Government has decided not to entertain any request for change of location of industries set up in this category areas unless the changes required to be made are to another place which is also turned to category "A".

In addition 55 districts currently eligible for Central subsidy, but not included in category A, have been put in category 'B' while 113 districts not included in the above two categories have been put in category 'C'. Industrial units in these two category districts also cannot move out except to category 'A' or 'B' areas.

The Government has also taken steps to avoid congestion in metropolitan cities with 10 lakh or more population, and other cities which had populations of above 5 lakhs in 1981 census. Any migration of an industry to within urban limits of these cities will not be allowed. □

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Four-fold increase in tiger population

PROJECT Tiger was started in the year 1973-74. India has now 15 Tiger Reserves in the States of Rajasthan, U.P., West Bengal, Madhya Pradesh, Karnataka, Bihar, Assam, Orissa, Maharashtra, Kerala, Arunachal Pradesh, and Andhra Pradesh.

The main objective of Project Tiger is to preserve tiger in specially constituted Reserves, representing different habitat types with the aim of maintenance of a viable tiger population in India in its natural environment as part of our National heritage for the benefit, education and enjoyment of future generations. The survival of man is dependent on the survival of animals and plant life.

Initially there were nine Tiger Reserves covering an area of about 14,200 sq. kms. These are located in Assam, Bihar, Orissa, U.P., Madhya Pradesh, Maharashtra, Karnataka, Rajasthan and West Bengal. Two additional Reserves were added in 1978-79, located in Kerala and Rajasthan. Four additional Reserves were added in 1982-83, in Arunachal Pradesh, Madhya Pradesh, Andhra Pradesh and West Bengal. The total area now under Project Tiger is 24,712 sq. kms. in 15 Tiger Reserves.

Project Tiger is a centrally sponsored scheme from 1979-80 with equal sharing between Centre and the States. Upto 1978-79, it was a Central Sector Scheme with full assistance by the Central Government.

The 15 Reserves under Project Tiger are:—Ranthambhor in Rajasthan, Corbett in Uttar Pradesh, Sunderbans in West Bengal, Kanha in Madhya Pradesh, Bandipur in Karnataka, Palamau in Bihar, Indravati in Madhya Pradesh, Buxa in West Bengal, Sariska in Rajasthan, Manas in Assam, Simlipal in Orissa, Melghat in Maharashtra, Periyar in Kerala, Namdapha in Arunachal Pradesh and Nagarjunsagar in Andhra Pradesh.

One of the main achievements of Project Tiger is the excellent recovery of habitat and increase in the populations of all species of wildlife in the Reserves. Tiger population has increased from 268 in 1972 to 875 in 1982.

The Sixth Five Year Plan has laid special emphasis on enlargement of some reserves, intensification of protection and habitat development in the buffer zones of existing reserves, creation of additional Tiger Reserves and strengthening research programmes in Tiger Reserves. □

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